

# U.S. Army Environmental Restoration Programs Guidance Manual

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Prepared by:  
U.S. Army  
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April 1998

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
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1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE April 1998	3. REPORT TYPE AND DATES COVERED FINAL		
4. TITLE AND SUBTITLE U.S. Army Environmental Restoration Programs Guidance Manual			5. FUNDING NUMBERS C-DAAM01-95-C-0063	
6. AUTHOR(S) Ms. Karen Wilson, U.S. Army Environmental Center Mr. Robert Metzger, SciTech Services, Inc. Mr. Dakshesh Patel, SciTech Services, Inc.				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) SciTech Services, Inc. 1311 Continental Drive, Suite G Abingdon, MD 21009			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Environmental Center ATTN: SFIM-AEC-ER Aberdeen Proving Ground, MD 21010-5401			10. SPONSORING/MONITORING AGENCY REPORT NUMBER SFIM-AEC-ER-CR-98014	
11. SUPPLEMENTARY NOTES This manual replaces U.S. Army Installation Restoration Program Guidance Manual, dated December 1993				
12a. DISTRIBUTION/AVAILABILITY STATEMENT Distribution Statement A - Approved for public release, distribution is unlimited			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) The U.S. Army Environmental Restoration Programs Guidance Manual was prepared by USAEC to provide guidance to the Installation Commander and his/her staff on implementing the Installation Restoration Program and the Base Realignment and Closure (BRAC) Environmental Restoration Program. The manual includes site identification, remedial action process, program management, documentation requirements and approvals, concurrent requirements, public participation, and contract administration. This manual is not intended to replace or modify existing Army regulations or Headquarters Department of the Army directives but to supplement the requirements set forth in these documents.				
14. SUBJECT TERMS Environmental Restoration, Army Account  Installation Restoration National Priorities List Restoration Response Action Process Installation Action Plan  Contracting BRAC Environment Restoration Compliance BRAC Cleanup Plan  Removals RCRA Peer Review			15. NUMBER OF PAGES  383	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE UNCLASSIFIED	19. SECURITY CLASSIFICATION OF ABSTRACT UNCLASSIFIED	20. LIMITATION OF ABSTRACT UL	

19980713 024

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Prepared by:  
U.S. Army  
Environmental Center  
April 1998



DEPARTMENT OF THE ARMY  
U.S. ARMY ENVIRONMENTAL CENTER  
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SFIM-AEC-ERP (200)

16 APR 1994

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SUBJECT: U.S. Army Environmental Restoration Programs Guidance Manual

1. Reference memorandum, USAEC, SFIM-AEC-IRP, 24 Feb 94, subject: Installation Restoration Program (IRP) Guidance Manual.
2. The subject manual is enclosed for your use in the planning, programming, and execution of both the Army Active Installation Restoration Program (IRP) and the Army Base Realignment and Closure Environmental Restoration Program (BRAC ERP). The previous restoration guidance manual (reference) only addressed the Army's IRP whereas this document has been revised to also accommodate the BRAC ERP. Additionally, the revised manual also reflects a number of changes that have been necessitated since the last guidance manual was distributed in February 1994.
3. The *Environmental Restoration Programs Guidance Manual* provides a comprehensive "road map" which will enable Army environmental restoration personnel to successfully manage the Army's IRP and BRAC ERP. Please ensure that the manual receives the widest dissemination.
4. To request additional copies of the manual, you may contact the U.S. Army Environmental Center Technical Information Center at (410) 671-3338. Efforts are being taken to include the Environmental Restoration Programs Guidance Manual on the Defense Environmental Network Information Exchange (DENIX) by early summer.
5. Should you have specific questions or comments regarding the content of the manual, please contact Ms. Karen Wilson at (410) 671-1525/3240 (DSN 584).

Encl

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## TABLE OF CONTENTS

<b>CHAPTER 1: PURPOSE AND SCOPE OF THE ARMY'S ENVIRONMENTAL RESTORATION PROGRAMS.....</b>	<b>1-1</b>
1.1 PURPOSE.....	1-1
1.2 THE INSTALLATION RESTORATION PROGRAM (IRP) .....	1-3
1.2.1 Early Restoration Legislation .....	1-3
1.2.2 IRP Funding.....	1-3
1.2.3 Eligibility for the Environmental Restoration, Army (ER,A) Account .....	1-4
1.3 BRAC ENVIRONMENTAL RESTORATION PROGRAM (BRAC ERP).....	1-5
1.3.1 BRAC Selection Process.....	1-5
1.3.2 BRAC Fast Track Cleanup .....	1-6
1.3.3 Basic Principles of the BRAC Environmental Process.....	1-7
1.3.4 BRAC ERP Funding.....	1-7
1.3.5 BRAC Eligibility .....	1-7
1.4 BRAC ERP VERSUS THE IRP .....	1-8
1.5 REQUIREMENTS AND RELATED ACTIVITIES .....	1-8
1.5.1 CERCLA Application to the IRP and BRAC ERP.....	1-9
1.5.2 The National Priorities List (NPL) and Interagency Agreements.....	1-10
1.5.3 RCRA Corrective Actions .....	1-11
1.5.4 Third Party Sites .....	1-12
1.5.5 Research, Development, and Demonstration (RD&D).....	1-12
1.5.6 Building Demolition and Debris Removal (BD/DR).....	1-12
1.5.7 Underground Storage Tanks (USTs).....	1-13
1.5.8 Real Property Acquisition, Outgrant, and Disposal Transactions .....	1-13
1.5.9 Construction Site Environmental Surveys.....	1-14
1.5.10 USEPA Munitions Rule and DoD Range Rule.....	1-14
1.5.11 Complying with the National Environmental Policy Act (NEPA).....	1-15

## TABLE OF CONTENTS (Continued)

1.6	TERMINOLOGY .....	1-15
1.6.1	Facility .....	1-16
1.6.2	Response/Response Action .....	1-17
1.6.2.1	Removals.....	1-17
1.6.2.2	Remedial Actions and Remedial Action Process.....	1-18
1.6.2.3	Operable Units (OU).....	1-18
 <b>CHAPTER 2: AUTHORITIES AND RESPONSIBILITIES .....</b>		<b>2-1</b>
2.1	DEPARTMENT OF DEFENSE.....	2-1
2.2	DEPARTMENT OF THE ARMY (DA) RESTORATION ORGANIZATION .....	2-3
2.3	MAJOR ARMY COMMAND (MACOM) RESPONSIBILITIES .....	2-5
2.4	INSTALLATION COMMANDER (IC) RESPONSIBILITIES .....	2-6
2.4.1	The Remedial Project Manager's (RPM) or BRAC Environmental Coordinator's (BEC) Responsibilities.....	2-10
2.5	EXECUTOR RESPONSIBILITIES .....	2-11
2.6	KEY DOCUMENT APPROVAL AUTHORITY .....	2-13
2.6.1	ROD/DD Approvals.....	2-13
2.6.1.1	ROD/DD Approval Authority.....	2-13
2.6.1.2	Approval Timelines .....	2-14
2.6.2	Completion Report Approvals.....	2-14
2.6.3	Interagency Agreement Approvals .....	2-15
2.6.4	Property Transfer Document Approvals.....	2-15

## TABLE OF CONTENTS (Continued)

<b>CHAPTER 3: RESTORATION RESPONSE ACTION PROCESS .....</b>	<b>3-1</b>
3.1 INTRODUCTION .....	3-1
3.2 RESPONSE ACTION ALTERNATIVES .....	3-3
3.3 REMEDIAL ACTION PROCESS .....	3-3
3.4 IDENTIFICATION PHASE .....	3-6
3.4.1 Discovery and Notification .....	3-6
3.4.2 Preliminary Assessment (PA) .....	3-11
3.4.3 Site Inspection (SI) .....	3-12
3.4.4 USEPA Revised Hazard Ranking System (HRS).....	3-13
3.5 INVESTIGATION PHASE .....	3-14
3.5.1 RI/FS Scoping .....	3-16
3.5.2 Site Characterization .....	3-19
3.5.3 Development of Alternatives .....	3-23
3.5.4 Screen Alternatives .....	3-25
3.5.5 Treatability Investigation .....	3-26
3.5.6 Detailed Analysis of Alternatives and the Feasibility Study .....	3-26
3.5.7 Selection of Remedy, the Proposed Plan, and Decision Documents .....	3-31
3.5.8 Generic Time Line for RI/FS .....	3-32
3.5.9 Operable Units .....	3-34
3.5.10 Recommendations for Improving the RI/FS Process.....	3-34
3.6 CLEANUP PHASE .....	3-35
3.6.1 Remedial Design (RD).....	3-35
3.6.2 Remedial Action (RA) .....	3-37
3.6.3 Post-Project Activities .....	3-37
3.6.4 Removal Actions.....	3-38
3.6.5 Presumptive Remedies.....	3-39
3.6.6 Natural Attenuation.....	3-40
3.6.7 Monitoring .....	3-42
3.6.7.1 Interim Monitoring within the RI/FS or REM Phase .....	3-42
3.6.7.2 Long-Term Monitoring.....	3-43
3.6.8 Institutional Controls .....	3-43

## TABLE OF CONTENTS (Continued)

3.7	SITE CLOSE-OUT PHASE .....	3-45
3.7.1	Construction Completion .....	3-45
3.7.2	Deleting Parcels from NPL .....	3-46
3.7.3	Documentation .....	3-47
3.7.4	Ongoing Responsibilities .....	3-47
<b>CHAPTER 4: CONCURRENT REQUIREMENTS .....</b>		<b>4-1</b>
4.1	SCHEDULES .....	4-1
4.1.1	CERCLA/SARA Requirements .....	4-1
4.1.2	Sequence of Actions Requiring Approval .....	4-2
4.1.2.1	Feasibility Study, Proposed Plan, and Responsiveness Summary .....	4-2
4.1.2.2	Record of Decision/Decision Document .....	4-3
4.1.2.3	ROD/DD Review Procedures .....	4-3
4.1.2.4	Remedial Design/Remedial Action .....	4-4
4.2	COORDINATION WITH REGULATORY AGENCIES .....	4-4
4.2.1	Notification .....	4-5
4.2.2	Participation in Decision Making .....	4-5
4.2.3	NPL Installation IAGs and FFAs .....	4-6
4.2.4	States Role at Non-NPL Sites .....	4-6
4.2.5	The Defense State Memorandum of Agreement (DSMOA)/Cooperative Agreement (CA) Program .....	4-7
4.3	PUBLIC PARTICIPATION .....	4-10
4.3.1	Army Policy on Public Participation .....	4-10
4.3.2	Public Participation Requirements Relating to the RI/FS .....	4-15
4.3.3	Technical Review Committee (TRC)/Restoration Advisory Board (RAB) ..	4-16
4.3.3.1	TRCs .....	4-17
4.3.3.2	RABs .....	4-17
4.3.3.3	Technical Assistance for Public Participants (TAPP) .....	4-19
4.3.4	Public Participation Requirements Relating to Removals and Remedial Action .....	4-21
4.4	WORKER HEALTH AND SAFETY .....	4-22
4.5	DATA QUALITY OBJECTIVES .....	4-24

## TABLE OF CONTENTS (Continued)

4.6	SAMPLING AND ANALYSIS PLAN (SAP) .....	4-30
4.7	APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs) .....	4-32
4.8	RISK ASSESSMENTS .....	4-36
4.8.1	Human Health Risk Assessment .....	4-38
4.8.1.1	Data Collection and Evaluation .....	4-38
4.8.1.2	Exposure Assessment .....	4-40
4.8.1.3	Toxicity Assessment .....	4-40
4.8.1.4	Risk Characterization .....	4-41
4.8.1.5	Regulatory Framework .....	4-41
4.8.1.6	Army Guidance .....	4-42
4.8.2	ECOLOGICAL RISK ASSESSMENT .....	4-42
4.8.2.1	ERA Framework .....	4-42
4.8.2.2	Tiered Approach to ERA .....	4-45
4.9	HEALTH ASSESSMENTS .....	4-46
4.10	NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COMPLIANCE .....	4-48
4.11	PEER REVIEW .....	4-49
4.11.1	Purpose .....	4-50
4.11.2	Phase 1 - Project Selection .....	4-50
4.11.2	Phase 2 - Environmental Peer Review Forum/Team Description .....	4-51
4.11.3	Phase 3 - Environmental Peer Review Team Recommendations/Results .....	4-52
<b>CHAPTER 5: DOCUMENTATION, REPORTS, AND COMMUNICATIONS .....</b>		<b>5-1</b>
5.1	ADMINISTRATIVE RECORD .....	5-1
5.2	INFORMATION REPOSITORY .....	5-6
5.3	DECISION DOCUMENTS (DDs) .....	5-7
5.3.1	Community Relations Responsiveness Summary .....	5-8
5.3.2	Review and Approval .....	5-8

## TABLE OF CONTENTS (Continued)

5.4	DISTRIBUTION AND REVIEW OF DOCUMENTS AND REPORTS .....	5-9
5.5	FEDERAL AGENCY HAZARDOUS WASTE COMPLIANCE DOCKET .....	5-13
5.6	DEFENSE ENVIRONMENTAL NETWORK AND INFORMATION EXCHANGE (DENIX).....	5-14
5.7	INSTALLATION ACTION PLANS AND BRAC CLEANUP PLANS .....	5-15
5.7.1	Installation Action Plans (IAP).....	5-15
5.7.1.1	Basic Requirements .....	5-15
5.7.1.2	Format.....	5-16
5.7.1.3	Distribution .....	5-16
5.7.2	BRAC Cleanup Plans (BCP) and BCP Abstracts .....	5-18
5.7.2.1	Basic Requirements .....	5-18
5.7.2.2	Format.....	5-19
5.7.2.3	Distribution .....	5-19
5.8	COST-TO-COMPLETE .....	5-20
5.9	DEFENSE SITE ENVIRONMENTAL RESTORATION TRACKING SYSTEM..	5-20
5.9.1	Installation Information .....	5-21
5.9.2	Site Information .....	5-21
5.9.3	BRAC Information.....	5-21
5.9.4	Reports .....	5-22
5.9.5	Review and Update .....	5-23
5.10	RELATIVE RISK SITE EVALUATION.....	5-23
5.10.1	RRSE Framework .....	5-23
5.10.2	Requirements .....	5-24
5.10.3	RRSE Scoring.....	5-24
5.10.4	RRSE Quality Assurance Plan.....	5-26
5.11	ANNUAL REPORT TO CONGRESS .....	5-26
5.12	PROPERTY TRANSFER AND LEASE .....	5-27
5.12.1	Environmental Baseline Survey.....	5-28
5.12.2	Finding of Suitability to Transfer .....	5-28



## TABLE OF CONTENTS (Continued)

5.12.2.1	Property with No Release or Disposal .....	5-29
5.12.2.2	Property with Release or Disposal .....	5-29
5.12.2.3	Approvals .....	5-29
5.12.3	Finding of Suitability to Lease .....	5-30
5.12.4	Environmental Condition of Property .....	5-30
5.13	CLEANUP RESPONSIBILITIES AFTER PROPERTY TRANSFER .....	5-30
5.14	ENVIRONMENTAL PROGRAM REQUIREMENTS (EPR) REPORT .....	5-31
<b>CHAPTER 6: RESTORATION PROGRAMS MANAGEMENT.....</b>		<b>6-1</b>
6.1	PLANNING AND PROGRAMMING .....	6-1
6.1.1	Installation Action Plan.....	6-1
6.1.2	BRAC Cleanup Plan (BCP) and BCP Abstract .....	6-2
6.1.3	Defense Site Environmental Restoration Tracking System (DSERTS) .....	6-2
6.1.4	Cost-to Complete (CTC).....	6-2
6.1.5	Relative Risk Site Evaluation (RRSE).....	6-3
6.2	BUDGET PREPARATION.....	6-3
6.2.1	IRP Budget Categories.....	6-3
6.2.2	BRAC ERP Budget Categories.....	6-5
6.2.3	MACOM Requirements for IRP .....	6-5
6.2.4	MACOM Requirements for ERP IRP.....	6-6
6.3	FUNDING.....	6-6
6.3.1	IRP .....	6-6
6.3.2	BRAC.....	6-6
6.3.3	Special Funding Issues.....	6-7
6.3.3.1	The Military Construction, Army (MCA) Appropriation.....	6-7
6.3.3.2	Reimbursement for Non-Army Activities .....	6-7
6.3.3.3	New IRP Sites .....	6-8
6.3.3.4	Public Involvement Funding.....	6-8
6.3.3.5	RAB/TRC Funding .....	6-8
6.3.3.6	Technical Assistance for Public Participation (TAPP) Funding.....	6-9

## TABLE OF CONTENTS (Continued)

6.4	EXECUTION.....	6-9
6.4.1	Execution Strategy .....	6-9
6.4.2	Obligation Goal.....	6-9
6.4.3	Defense Planing Guidance (DPG) IRP Goals.....	6-10
6.4.4	DPG BRAC Goals .....	6-10
6.4.5	Program Management Goal .....	6-10
6.5	PROGRAM TRACKING AND REPORTING.....	6-10
6.5.1	Fund Tracking.....	6-11
6.5.2	Funding Outlays.....	6-11
6.5.3	Performance Measures.....	6-12
6.5.3.1	Program Execution Reviews.....	6-13
6.5.3.2	ACSIM IRP/BRAC Reviews.....	6-13
6.5.3.3	DoD In-Process Review.....	6-13
6.5.3.4	The Defense Environmental Cleanup Program Annual Report to Congress.....	6-13
<b>CHAPTER 7: CONTRACTING .....</b>		<b>7-1</b>
7.1	COR DUTIES AND TASKS.....	7-3
7.1.1	The COR and the KO.....	7-4
7.1.2	COR Tasks .....	7-5
7.2	COR FUNCTIONS.....	7-7
7.2.1	The Procurement Process.....	7-7
7.2.2	Technical Oversight.....	7-9
7.2.2.1	Work Assignments.....	7-9
7.2.2.2	Work Plan Review and Approval .....	7-9
7.2.2.3	Monitoring Contractor Performance.....	7-10
7.2.2.4	Contract Modification.....	7-12
7.2.2.5	Review and Approval of Final Report.....	7-12
7.2.2.6	Contract Close-out .....	7-12
7.2.2.7	Disbursement .....	7-13
7.3	COR FUNCTIONS DURING SPECIFIC ACTIVITIES .....	7-13

## TABLE OF CONTENTS (Continued)

7.3.1	Removals.....	7-13
7.3.2	Identification Phase.....	7-14
7.3.3	Investigation Phase .....	7-14
7.3.4	Cleanup Phase.....	7-15
7.4	SMALL BUSINESS CONTRACTING .....	7-16
7.5	SIMPLIFIED ACQUISITION PROCEDURES.....	7-18
7.5.1	Imprest Fund .....	7-19
7.5.2	Purchase Order.....	7-20
7.5.3	Blanket Purchase Agreement (BPA).....	7-20
7.5.4	Government-Wide Commercial Purchase Cards .....	7-20
7.5.5	Fast Payment Procedure.....	7-20
7.6	TECHNICAL ASSISTANCE FOR PUBLIC PARTICIPATION (TAPP).....	7-21
7.7	TYPES OF CONTRACTS .....	7-22
7.7.1	Cost vs. Price .....	7-22
7.7.2	Major Pricing Types .....	7-23
7.7.2.1	Firm Fixed Price (FFP).....	7-23
7.7.2.2	Fixed Price Incentive (FPI).....	7-25
7.7.2.3	Fixed Price with Economic Price Adjustment.....	7-26
7.7.2.4	Cost Plus Fixed Fee (CPFF) .....	7-26
7.7.2.5	Cost Plus Incentive Fee (CPIF).....	7-27
7.7.2.6	Cost Plus Award Fee (CPAF).....	7-27
7.7.2.7	Time and Material/Labor-Hour (T&M).....	7-28
7.7.2.8	The Illegal Contract Type .....	7-28
7.7.3	Purpose Types of Contracts .....	7-28
7.7.3.1	Architect and Engineering (A&E) .....	7-29
7.7.3.2	Construction.....	7-29
7.7.3.3	Information Technology .....	7-30
7.7.3.4	Services.....	7-30
7.7.3.5	Research and Development (R&D) .....	7-30
7.7.4	Ordering Types of Contracts.....	7-31

## TABLE OF CONTENTS (Continued)

7.7.4.1	Indefinite Delivery/Indefinite Quantity (IDIQ) .....	7-31
7.7.4.2	Federal Supply Schedule Contracts .....	7-32
7.7.4.3	Requirements Contracts .....	7-32
7.7.4.4	Blanket Purchase Agreements (BPA) .....	7-33
7.7.5	Total Environmental Restoration Contract (TERC) .....	7-33
ABBREVIATIONS AND ACRONYMS .....		AA-1
REFERENCES .....		R-1
GLOSSARY .....		G-1
INDEX .....		IND-1

## LIST OF APPENDICES

APPENDIX A	Evaluation of IRP Sites Versus BRAC ERP Sites .....	A-1
APPENDIX B	Model Federal Facility Agreement for NPL Site .....	B-1
APPENDIX C	Range Response Process .....	C-1
APPENDIX D	Extracts from AR 200-1 .....	D-1
APPENDIX E	Memorandum of Agreement Between the (Executor) and (Installation) Relating to Procedures for the (Installation) Defense Environmental Restoration Program .....	E-1
APPENDIX F	Comparison of RCRA and CERCLA Actions .....	F-1
APPENDIX G	Table G-1. Definition of Treatment Terms .....	G-1
	Table G-2. Treatment Technologies Screening Matrix .....	G-7
APPENDIX H	Decision Document Outline .....	H-1
APPENDIX I	Report Documentation Page .....	I-1
APPENDIX J	Types of Contracts .....	J-1
APPENDIX K	Procurement Options: 8(A) Program .....	K-1
APPENDIX L	Alphabetical Listing of Pertinent Environmental Internet Web Sites .....	L-1
APPENDIX M	List of Pertinent Phone Numbers .....	M-1

## LIST OF TABLES

Table 2-1	Approval Authority for RODS/DDS .....	2-14
Table 3-1	Recommended Remedial Investigation Report Format .....	3-20
Table 3-2	Criteria for Evaluating and Comparing Alternatives Grouped By Their Roles in Selecting the Remedy .....	3-28
Table 3-3	Recommended Feasibility Study Report Format .....	3-29
Table 3-4	Selective Presumptive Remedies (Preferred Technologies) for Military Installations .....	3-39
Table 4-1	Steps in the DQO Process .....	4-26
Table 4-2	Elements of a Quality Assurance Program Plan .....	4-31
Table 4-3	Elements of a Field Sampling Plan .....	4-31
Table 4-4	Elements of a Work Plan .....	4-32
Table 4-5	Army and State Roles in Identifying and Complying with ARARS .....	4-35
Table 4-6	Tiered-Analysis Process .....	4-45
Table 5-1	Contents of an Administrative Record .....	5-3
Table 5-2	Submissions, Review and Distribution of IR/BRAC Documents and Reports .....	5-10
Table 5-3	Distribution List for Regulatory Approved or Final Documents .....	5-12
Table 5-4	Installation Action Plan Formatting Guide .....	5-17

## LIST OF FIGURES

Figure 3-1	Comparison of RCRA and CERCLA Processes.....	3-2
Figure 3-2	Remedial Action Process .....	3-4
Figure 3-3	Response Action Alternatives Showing Relationship to Remedial Action Process .....	3-5
Figure 3-4	Alternate Elements of Remedial Action Process Steps .....	3-9
Figure 3-5	Key Decision Points in the RI/FS Process .....	3-15
Figure 3-6	Flow Diagram for RI/FS Scoping .....	3-18
Figure 3-7	Flow Diagram for Site Characterization .....	3-22
Figure 3-8	Flow Diagram for the Development of Alternatives .....	3-24
Figure 3-9	Flow Diagram for Detailed Analysis of Alternatives .....	3-30
Figure 3-10	Generic Time Line for RI/FS .....	3-33
Figure 4-1	Community Relations CERCLA Activities .....	4-13
Figure 4-2	Steps in the Human Health Component of the Baseline Risk Assessment Process .....	4-39
Figure 4-3	Framework for Ecological Risk Assessment .....	4-43
Figure 5-1	Flow Diagram of the Relative Risk Site Evaluation Framework .....	5-24
Figure 7-1	Common Types of Contracts .....	7-24

# **CHAPTER 1:**

## **PURPOSE AND SCOPE OF THE ARMY'S ENVIRONMENTAL RESTORATION PROGRAMS**

### **1.1 PURPOSE**

The Defense Environmental Restoration Program (DERP) provides for the identification, investigation, and cleanup of hazardous waste sites at Department of Defense (DoD) facilities. DERP focuses on cleanup of contamination associated with past DoD activities to ensure threats to public health and the environment are eliminated. The program includes the:

- Installation Restoration Program (IRP)
- Base Realignment and Closure (BRAC) Environmental Restoration Program (BRAC ERP)
- Formerly Used Defense Sites (FUDS) Program

The Army's environmental restoration programs are highly visible and resource intensive elements of the Army's total environmental program. They provide a structured but flexible approach for identifying, evaluating, and cleaning up sites where hazardous substances have been released to the environment. A series of defined steps, referred to as the "remedial action process," constitutes the backbone of this structured approach. These steps lead to one or more categories of response (removals, interim remedial actions, or final remedial actions) or they may demonstrate that no additional action is required. Goals for cleanup are determined on a site-by-site basis. All applicable or relevant and appropriate requirements (ARARs) of Federal and state environmental laws are considered in establishing goals and in selecting the best methods for cleanup.

The IRP for active (non-closing) Army installations is authorized by the Defense Environmental Restoration Program (DERP, codified in 10 USC Section 2701-2708 and 2810). It is implemented subject to and in a manner consistent with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986 and CERCLA's implementing regulation, the "National Oil and Hazardous Substances Pollution Contingency Plan" (NCP, codified in 40 Code of Federal Regulations (CFR) 300). Although CERCLA drives the IRP, the Resource Conservation and Recovery Act (RCRA) of 1976 is applicable to numerous IRP projects.

The DoD has been engaged in force restructuring and downsizing, resulting in fewer military bases to support defense missions. The Base Realignment and Closure (BRAC) process has resulted in the closing or realigning of over 100 military facilities throughout the country. There have been four rounds of base closures: BRAC of 1988 (BRAC I); BRAC 1991 (BRAC 91); BRAC of 1993 (BRAC 93); and BRAC of 1995 (BRAC 95).

The BRAC ERP was established separate from the IRP with the objective of completing necessary environmental restoration at DoD installations placed under BRAC legislation. While the BRAC ERP is patterned after the IRP, it has been expanded to include such categories of contamination as asbestos, radon, polychlorinated biphenyls (PCBs), radiological hazards, unexploded ordnance, and other environmental concerns not normally addressed under the IRP.

All DoD installations subject to closure or realignment are in the process of executing actions in response to releases of hazardous substances, pollutants, contaminants, or hazardous solid wastes. Similarly, in response to Federal and state environmental laws, all installations initiated environmental compliance programs prior to being listed for BRAC. BRAC installations have issues known as closure related compliance actions that must be addressed. A variety of restoration and compliance plans and regulatory agreements already serve to govern the scope and timing of multiple investigations and associated decision making at an installation. BRAC installations prepare National Environmental Policy Act (NEPA) documents and an Environmental Baseline Survey (EBS).

Hazardous waste sites located on property formerly controlled by components of the DoD at the time of release are known as FUDS. Headquarters (HQ) U.S. Army Corps of Engineers (USACE) manages the FUDS program for the DoD. The FUDS program is funded by the Environmental Restoration Account and is implemented in accordance with CERCLA and the NCP, as is the IRP and BRAC ERP. Active Army, Reserve, or National Guard installations receiving requests for information or investigation of potential FUDS contamination should immediately refer the request to HQUSACE. See the Program Manual DERP-FUDS (USACE, 1996) for more details on the FUDS program.

This guidance document (hereafter referred to as the "Guidance Manual") was developed to aid Army personnel in meeting the challenge of identifying individual sites, initiating the proper remediation or cleanup action, and satisfying regulatory agency and public participation requirements for IRP and BRAC ERP.

This chapter discusses how CERCLA /SARA and the National Contingency Plan (NCP) impact the IRP and the BRAC ERP. IRP and BRAC cleanups of National Priorities List (NPL) sites follow the CERCLA process. IRP and BRAC cleanups of non-NPL sites generally follow the basic CERCLA process.

## **1.2 THE INSTALLATION RESTORATION PROGRAM (IRP)**

The Army IRP was established in 1975 for installations where past disposal practices had caused contamination of streams and groundwater. Executive Order 12088, Federal Compliance with Pollution Control Standards, issued in 1978, requires Federal activities to comply with Federal environmental legislation.



### **1.2.1 Early Restoration Legislation**

The primary Federal legislation dealing with hazardous waste disposal was RCRA, passed in 1976. RCRA dealt only with current and future hazardous waste management and disposal practices until it was amended in 1984 by the Solid Waste Disposal Act (SWDA).

The first Federal legislation to require cleanup of past hazardous waste disposal sites was CERCLA. CERCLA was enacted in 1980 and implemented by Federal regulations in the NCP (40 CFR 300) December 1982 expanding response procedures for release of hazardous substances to the environment. Executive Order 12580, Superfund Implementation, signed 23 January 1987, delegated to departments and agencies within the Executive Branch specific Superfund implementation responsibilities which had previously been assigned to the President under CERCLA.

Congress amended RCRA in 1984. Among other changes, Sections 3004(u) and 3004(v) mandated cleanup of past disposal sites located at facilities for which a RCRA Part B permit is required. Section 3004(u) requires corrective actions for all releases of hazardous waste or constituents from any solid waste management unit (SWMU) at any facility seeking a RCRA permit regardless of the time the released waste was placed in the unit. Section 3004(v) requires corrective action where the contamination extends beyond the facility boundary. Section 3008(h) extends corrective actions to those sites with an interim, Part A, permit. Since most major Army installations generate and store hazardous wastes that require Part B permits, RCRA "corrective action" provisions may apply to many IRP sites. The IRP is consistent with the purposes of RCRA "corrective actions." However, RCRA is administered by the U.S. Environmental Protection Agency (USEPA) and the states through procedures and jurisdictions that differ from both the NCP and the IRP. Nevertheless, in many instances, following one program or the other will result in equivalent cleanup and avoid duplication of effort.

### **1.2.2 IRP Funding**

The Defense Appropriation Act of 1984 established the Defense Environmental Restoration Account (DERA), to fund the IRP for DoD installations within the Continental United States (CONUS). DERA also funded the FUDS program. Beginning in fiscal year 1997 (FY97), DERA was devolved into five separate accounts, one for each military department, a defense-wide account for defense agencies, and the FUDS program. The Army transfer account is known as Environmental Restoration, Army (ER,A).

### **1.2.3 Eligibility for the Environmental Restoration, Army (ER,A) Account**

The DERP guidance is published periodically by the DOD and lists activities eligible for ER,A funding. This listing reflects the DoD's March 1998 DERP Management Guidance.

IRP activities that are eligible for ER,A funding include:

- Investigations to identify, confirm, and determine the risk to human health and the environment resulting from past DoD contamination. This also includes feasibility studies or engineering evaluation and cost analysis (EE/CA); remedial action plans and designs; and removal or remedial actions.
- Expenses associated with cooperative multi-party cleanup plans and activities' litigation expenses.
- Remedial actions to protect or restore (not enhance) natural resources damaged by contamination from past hazardous waste disposal activities.
- Cleanup of low-level radioactive waste sites which have been identified as IRP sites.
- Management expenses associated with the IRP. Management expenses are those overhead costs required for adequate program oversight and management.
- Operation and maintenance costs for remedial systems and monitoring systems.
- Immediate actions necessary to address health and safety concerns resulting from past DoD contamination such as providing alternative water supplies or treatment of contaminated drinking water.
- Studies to locate abandoned underground tanks, activities to determine whether a release has occurred, and clean up of contamination.
- Response to releases from in-service tanks discovered during initial integrity testing (leak detection monitoring) per 40 CFR 280 where testing was conducted prior to the regulatory date of December 22, 1993.
- CERCLA response actions and eligible RCRA corrective actions identified in Federal Facility Agreement (FFA)/Interagency Agreements (IAGs).
- Corrective actions at solid waste management units (SWMUs) needed because of past DoD activities when the SWMU was inactive or closed prior to being subjected to RCRA requirements.
- Support services provided by another agency in accordance with 10 USC 2701(d).
- Fines and penalties imposed by regulatory agencies assessed under the authority of the Federal Facilities Compliance Act associated with IRP activities. (Note: These fines must be identified in the Budget Estimate Submission (BES) for the budget year.)

Activities that are **not** eligible for E,RA funding include:

- Closing or capping sanitary landfills unrelated to a hazardous waste cleanup action.
- Construction of hazardous waste storage, transfer, treatment or disposal facilities, except when part of a IRP response action.
- Testing, repair or remediation of active underground tanks. Costs of replacing leaking underground tanks.
- Costs of testing, storing, disposing, or replacing PCB transformers.
- Costs of asbestos and lead based paint surveys, containment, removal, or disposal, except when incidental to a response action.
- Costs of spill prevention and containment measures for currently operating equipment and facilities.
- Cleanup costs of spills associated with current operations.
- Costs of operation, maintenance, or repair to hazardous waste treatment, storage or disposal facilities which are currently in use (i.e., regulated or permitted), except when part of a response action.
- Investigations or cleanup activities associated with hazardous waste treatment, storage or disposal facilities that received operating permits under RCRA.

### **1.3 BRAC ENVIRONMENTAL RESTORATION PROGRAM (BRAC ERP)**

Environmental programs are executed at closure installations through the BRAC ERP, which includes environmental cleanup actions and environmental issues that impact property reuse. The BRAC ERP is patterned after the Army's IRP. The most significant differences between the IRP and BRAC ERP are identified in Appendix A.

#### **1.3.1 BRAC Selection Process**

The Defense Authorization Amendments and Base Closure and Realignment Act of 1988, and the Defense Base Closure and Realignment Act of 1990 as supplemented by several key statutes (including, the Base Closure Community Assistance Act of 1994 and the Base Closure Community Redevelopment and Homeless Assistance Act of 1994), establish the basic requirements for identifying and implementing domestic military base closures and realignments. The Defense Base Closure and Realignment Act of 1990 stipulates how installations will be placed on the BRAC list and prescribes a time frame for the implementation of BRAC. Specifically:

- The DoD must present the proposals for base closure and realignments to the Defense Base Closure and Realignment Commission. These proposals are based on eight selection criteria. The first four criteria are given preference and concern military value: mission, land, and facilities availability; contingency and mobilization requirements; and, cost and manpower implications. The remaining four criteria focus more on economic and environmental considerations: return on investment, local economic impact, impact on community infrastructure, and environmental impact.
- Upon receipt of the DoD proposals, the Commission must hold public meetings, and then submit to the President the Commission's list of bases to be closed or realigned.
- If the President approves the Commission's recommendations, the list is forwarded to Congress. Congress then has 45 legislative days to either pass a joint resolution blocking the entire list or the entire list becomes law.
- The DoD must begin implementation of all realignments and closures within two years of the date the President transmitted his approval to Congress and to complete them no later than six years after the same date.

### **1.3.2 BRAC Fast Track Cleanup**

In July 1993, the President announced a five-part plan to revitalize communities impacted by base closures. This policy announcement was designed to promote the early reuse of closing installations by expediting environmental cleanups. Congress supported the President's five-part plan by enacting the Base Closure Community Assistance Act (Subtitle A of Title XXIX of the National Defense Authorization Act for Fiscal Year 1994). This legislation allows the military to convey property, buildings, and equipment to the communities affected by base closures at costs less than fair market value and, when appropriate, for free to help create jobs. It provides authority to DoD to implement procedures to reduce the time it takes to release closing installations to communities and foster job creation and economic development. To accomplish these goals and to make the property environmentally suitable, while protecting human health and the environment, DoD created the Fast Track Cleanup approach to environmental restoration. The Fast Track Cleanup approach consists of the following procedures:

- Establish BRAC Cleanup Teams (BCTs) consisting of representatives from the installation, USEPA, and the state.
- Conduct a bottom-up review of installation environmental cleanup programs and develop BRAC Cleanup Plans (BCP) that integrate reuse priorities.
- Involve the public in the cleanup process.
- Identify uncontaminated properties.
- Determine the environmental suitability to lease.

- Accelerate the National Environmental Policy Act (NEPA) analysis process. Although Congress requires that DoD close BRAC installations within six years, the cleanup may require a longer period of time. The aggressive cleanup schedule is more in line with the Fast Track Cleanup Goal of “expediting and improving environmental response actions in order to facilitate the disposal and reuse of a BRAC installation, while protecting human health and the environment.”

### **1.3.3 Basic Principles of the BRAC Environmental Process**

The objective of the DoD BRAC Fast Track Cleanup initiative is to develop a comprehensive strategy for expedited cleanup at all BRAC installations so that property can be made available for the community in a timely fashion.

A BCT is assembled at each installation where property will be made available for transfer to the community. The BCT meets to review the process underway, to clean up the property, to evaluate methods, to handle problems that develop, and to discuss how to integrate environmental cleanup priorities with reuse needs.

The BCT is responsible for the preparation of an installation BCP. The BCP provides the basis for meeting or modifying deadlines in statutes and enforceable agreements. The BCP is intended to be a roadmap of BRAC environmental programs and the macro-level strategy and schedule for accelerating environmental cleanup activities.

The BCP Abstract is the semi-annually updated addendum to the BCP. The BCP Abstract is used by the Army to support the DoD data call requirements, In-Process Reviews, and the Report to Congress.

### **1.3.4 BRAC ERP Funding**

Congress established the DoD Base Closure Account (BCA) to provide multi-year funds for BRAC activities. These funds for environmental restoration activities can only be used to investigate and remediate existing conditions at closing installations or realigning installations which have property identified for excessing. Examples of activities covered by this account include environmental restoration, construction of replacement facilities, and outplacement assistance for base personnel. BRAC cleanup requirements consist of previously identified IRP requirements plus those cleanup actions required for property transfer. Costs for ensuring environmental compliance of current routine operations are not supported through the Army BCA. However, those compliance requirements related to activities required to be performed early to expedite closure may be funded with BCA. ER,A funds transferred to meet previously identified ER,A requirements, plus additional funds from the Army’s Total Obligation Authority (TOA) for the additional requirements, constitute the Army BCA.

### **1.3.5 BRAC Eligibility**

Activities eligible for BCA funds for the BRAC ERP include both cleanup and compliance activities. BRAC cleanup activities are the same as those listed in Section 1.2.3. However, BCA eligible environmental requirements are limited to closure-related compliance activities. When

identifying requirements at closing and realigning installations, differentiation must first be made between closure-related compliance activities and mission/operational-related compliance activities. BCA eligible compliance activities may include:

- Response to releases from in-service underground storage tanks (USTs).
- Friable asbestos which poses a health risk and has not been abated by the installation.
- USTs to be removed because the tanks are no longer in compliance or will be out of compliance prior to transfer or lease of the property.
- Cleanup of leaking USTs no longer needed under closure of the installation.
- Cleanup of PCBs.
- Lead-based paint (LBP) cleanup. BCA will not pay for any LBP surveys since one can assume from the age of the building whether or not LBP is present. LBP soil sampling and abatement should only be addressed under the Residential Lead-Based Paint Hazard Reduction Act of 1992 (Title X of the Housing and Community Development Act of 1992). Any LBP soil sampling or abatement that is outside the provisions of Title X, shall be approved by the Headquarters Department of the Army (HQDA) BRAC office (BRACO) on a case-by-case basis.
- RCRA closure actions accelerated due to the closure of an installation.
- BRACO or HQDA approved unexploded ordnance projects.
- Radiological Issues (Commodity and Nuclear Regulatory Commission (NRC) license related decommissioning).

#### **1.4 BRAC ERP VERSUS THE IRP**

Key aspects of the IRP and BRAC programs are compared in Appendix A.

#### **1.5 REQUIREMENTS AND RELATED ACTIVITIES**

This Guidance Manual specifically addresses IRP and BRAC ERP activities under CERCLA for Army installations; U.S. Army Reserve, Regional Support Commands; and Federally owned U.S. Army National Guard Facilities. However, there are related activities that are applicable to the Army's IRP and BRAC ERP.

### 1.5.1 CERCLA Application to the IRP and BRAC ERP

The IRP and the BRAC ERP are implemented subject to and in a manner consistent with CERCLA. Some of the distinctions between CERCLA and the IRP, and the BRAC ERP were resolved by the 1986 SARA. SARA continued the Superfund for non-Federal sites, but, more importantly, it mandated the following changes for DoD and other Federal cleanup efforts:

- Established the DERP that has as one of its goals “the identification, investigation, research and development, and cleanup of contamination.” (Section 211)
- Continued the DERA to fund DERP activities. (Section 211)
- Added Section 120 to CERCLA relating to Federal facilities, and required that DERP activities be consistent with Section 120.

**Note: Throughout this Guidance Manual, CERCLA will be used to signify CERCLA as amended by SARA.**

CERCLA Section 120 requires that all Federal facilities “shall be subject to, and comply with, this act in the same manner and to the same extent, both procedurally and substantively, as any non-government entity.” CERCLA Section 120 requires that the Army:

- Involve the community in the remedial action decision through the review of proposed plans.
- Develop an administrative record (information repository).
- Enter into a consent decree (Interagency Agreement) with a schedule upon completion of the Record of Decision (ROD).
- Select a remedy with the Administrator of USEPA for NPL sites.

Key differences between Superfund and DERP that should be considered are:

- The Superfund is intended for the “worst” hazardous wastes sites in the nation. These sites are included on the NPL. USEPA administrative procedures and guidance documents reflect this emphasis. Sites do not have to be on the NPL in order to be cleaned up with IRP or BRAC ERP activities. Army IRP and BRAC ERP activities apply to all Army sites which pose a threat to public health, welfare, or the environment.
- Army IRP and BRAC ERP activities are not supported by Superfund, whether listed on the NPL or not. ER, A or BCA funds are used to implement the IRP/BRAC ERP.
- Some Superfund sites are abandoned and most others have numerous potentially responsible parties (PRPs) who may have contributed to the site’s contamination. Sites on active and closing Army installations are not abandoned, although the term “abandoned” is often misapplied to site names (e.g., abandoned landfills). The Army is usually the only responsible party for the contamination of its sites.

- IRP and BRAC ERP activities under DERP and CERCLA Section 120 are subject to administrative requirements which do not apply to Superfund sites. Examples are schedule requirements, IAGs, Defense and State Memoranda of Agreements (DSMOAs), Annual Reports to Congress, Restoration Advisory Boards (RABs), and Technical Review Committees (TRCs).
- The Army is the lead agency for investigations, removal actions, and cleanup.
- The Army is a Natural Resource Trustee.
- Restoration activities apply to all Army sites which pose a threat to public health, welfare, or the environment.
- Cleanup may be conducted under substantive state regulations at non-NPL installations.

### **1.5.2 The National Priorities List (NPL) and Interagency Agreements**

CERCLA Section 105 requires that USEPA develop a prioritized list of the nation's "worst" hazardous waste sites. This list, the NPL, includes both Federal and non-Federal sites. USEPA uses the revised Hazard Ranking System (HRS, as amended 14 December 1991) to identify installations for inclusion on the NPL. A facility may also be placed on the NPL if the Agency for Toxic Substances and Disease Registry (ATSDR) issues a "Public Health Advisory" against the facility. Thirty-seven Army installations are currently listed on the NPL (involving 41 listings), and one additional site has been proposed for listing. Eleven of the Army installations on the NPL are BRAC installations. Federal installations on the NPL are subject to additional procedural requirements of CERCLA Section 120, "Federal Facilities."

One of these requirements is for Interagency Agreements/Federal Facility Agreements (IAGs/FFAs). Literally interpreted, CERCLA Section 120(e)(2) requires IAGs/FFAs after the conclusion of an installation's remedial investigation/feasibility study (RI/FS). See Section 3.5 of this Guidance Manual for more details on RI/FS procedures. However, the preceding paragraph in the law mandates consultation during the RI/FS among the Federal agency, USEPA, and appropriate state authorities; as well as the USEPA and state authorities publishing the timetable and deadlines for the RI/FS. It is DoD policy that DoD components enter into IAGs/FFAs at its NPL installations as soon as practicable after listing (DASD(E), April 1988). Provisions of the model IAG are reproduced in Appendix B.

The Judge Advocate General (TJAG) has primary responsibility for execution of IAGs/FFAs (except for National Guard facilities). Proposed agreements will be coordinated with Army execution and proponent command activities and will be approved and signed by the Deputy Assistant Secretary of the Army for Environment, Safety and Occupational Health (DASA(ESOH)).

Other requirements that apply to NPL installations, but not to non-NPL installations, and sections of this Guidance in which they are addressed are given below:



- ATSDR Health Assessments (see Chapter 4.9)
- Schedule requirements beyond the Preliminary Assessment/Site Inspection (PA/SI) (see Chapter 4.1)

### **1.5.3 RCRA Corrective Actions**

Even though the DERP and Federal facilities sections of SARA require close coordination with states, some states may rely on their permitting authorities under RCRA to increase their oversight of IRP activities. Installation Commanders who undertake IRP activities should determine whether the state agency intends to exercise RCRA authority and, if needed, adjust their program accordingly.

State reliance on the use of RCRA was intensified by passage of the Federal Facility Compliance Act of 1992 which amended RCRA. The primary purpose of the Federal Facility Compliance Act was to ensure there was a complete and unambiguous waiver of sovereign immunity with regard to the imposition of administrative and civil fines and penalties against Federal facilities. The Federal Facility Compliance Act allowed state environmental agencies and the USEPA to impose civil penalties and administrative fines on Federal facilities under RCRA Section 6001 for violation of Federal, state, and local solid and hazardous waste laws.

USEPA or states may require installations to clean up hazardous waste sites in accordance with Section 3004(u) or 3008 (h) of RCRA if an installation is applying for, or has been issued, a Part B permit to store, treat, or dispose of hazardous wastes. RCRA corrective actions can be eligible for ER,A funding provided:

- The contamination resulted from activities that are not associated with current or ongoing waste generation.
- The site was closed prior to being subjected to RCRA permit requirements.
- The corrective action meets the definition of a response action under CERCLA (i.e., actions taken in response to a release or threatened release of hazardous substances into the environment).

Investigations and corrective action of SWMUs resulting from ongoing operations cannot be supported with restoration program funding. BRAC installations should support investigations and corrective action of SWMUs resulting from ongoing operations not related to BRAC closure with appropriate mission/operational funds.

Installation Commanders should be aware that RCRA Part B permits will most likely contain enforceable schedules for completion of corrective actions. Legal review of permit applications and permits by major Army command (MACOM) legal staff should be requested. Issues regarding eligibility criteria, schedules, and availability of funds should be raised to higher headquarters.

#### **1.5.4 Third Party Sites**

In addition to the sites that were created on Army property, many privately- and municipally-owned TSD facilities received hazardous wastes either from disposal contractors hired by the Army or directly from the Army. Under CERCLA and a number of state laws, the Army may become a PRP to enforcement actions taken to recover costs of cleanups. While USEPA cannot sue the Army to recover such costs, non-Federal PRPs can. Hence, the designation as “third party” sites.

Installation Commanders should be aware that USEPA has the authority under Section 104(e) of CERCLA to request any information pertaining to past waste disposal practices that may be related to an enforcement action. States may exercise similar authority under state laws. Requests for such information will be referred without delay to higher headquarters. No actions should be taken or statements made that could be interpreted as delaying or withholding relevant information. Also, no actions should be taken or statements made that would either acknowledge or deny responsibility prior to appropriate legal review.

#### **1.5.5 Research, Development, and Demonstration (RD&D)**

SARA Section 211, which established DERP, also provided for RD&D of:

- Means of reducing the quantities of hazardous waste generated.
- Methods of treatment, disposal, and management (including recycling and detoxifying) of hazardous waste.
- Cost-effective technologies for cleanup of hazardous substances.
- Toxicological data collection and methodology on risk of exposure to hazardous waste.
- Testing, evaluation, and field demonstration of innovative methods to control, contain, and treat hazardous substances.

MACOMs identify, nominate, and prioritize RD&D user requirements. Based on these requirements, the U.S. Army Environmental Center (USAEC), USACE, or Army Materiel Command (AMC) budget, manage, and monitor RD&D projects. Installation Commanders who have requirements that may be met through the RD&D program should contact their MACOM for guidance.

#### **1.5.6 Building Demolition and Debris Removal (BD/DR)**

BD/DR for safety purposes is normally not funded by ER, A or BCA, but should be funded by the Real Property Maintenance Account (RPMA). BD/DR can be funded if the BD/DR project is minor **and** if the project is required to facilitate a larger cleanup project (e.g., a building may be demolished to clean up extensive soil contamination). Installation Commanders who have BD/DR requirements should contact their MACOM for guidance.

### 1.5.7 Underground Storage Tanks (USTs)

Underground storage tanks are regulated under the authority of RCRA. The following UST projects may be funded by ER,A:

- Studies to locate abandoned USTs.
- Activities to determine whether a release has occurred from an abandoned site.
- Response to a known release at an abandoned UST site (unless the response is incidental to tank replacement).
- **Response to releases** from in-service USTs **only** when discovered during initial integrity testing (leak detection monitoring) per RCRA Subtitle I **and** where testing was conducted prior to the regulatory date of 22 December 1993.

The ER,A will not fund testing or repair of active USTs or costs to replace leaking USTs. Very few USTs qualify for ER,A funding. Funding of UST projects is usually through the RPMA.

BCA eligible UST activities include:

- Response to releases from in-service USTs.
- USTs to be removed because the tanks are no longer in compliance or will be out of compliance prior to transfer or lease of the property.
- Cleanup of leaking USTs no longer needed under closure of the installation.

### 1.5.8 Real Property Acquisition, Outgrant, and Disposal Transactions

Army installations can lease (i.e., outgrant) and transfer property irrespective of being on the BRAC list. The information contained in this Guidance Manual is intended to address real property outgrants and/or disposal transactions for active non-BRAC Army installations, as well as BRAC properties, since the procedures are very similar to those for lease or transfer of BRAC parcels.

Site closure under BRAC reflects the requirements associated with real property transfer. In order to facilitate reuse planning efforts, "uncontaminated" installation property must be identified as defined by the Community Environmental Response Facilitation Act (CERFA). No property can be conveyed by deed or can be leased until a Finding of Suitability to Transfer (FOST) or a Finding of Suitability to Lease (FOSL) has been signed. With the recent emphasis on early transfer of property, a document referred as a Finding of Suitability to Early Transfer (FOSET) has been established, where contamination may exist on the transferred property.

The Installation Commander or Army proponent for a prospective real property transaction within the United States, its territories, and possessions, will comply with the requirements of Section 15-6 of Army Regulation (AR) 200-1. Real property transactions covered by Section 15-6 of AR 200-1 are acquisitions, sales divesting title, transfers of jurisdiction between agencies, and leases. It is not applicable to reassignments within Department of the Army (DA), permits, licenses, and easements, except where extraordinary circumstances exist.

It is Army policy to prepare an Environmental Baseline Survey (EBS) to determine the environmental conditions of properties being considered for acquisition, outgrants, and disposals. (See Section 15-6 of AR 200-1). Reassignments within the DA, permits, licenses, and easements do not require an EBS; however, an EBS may be performed if desired by the Army or where extraordinary circumstances exist. The EBS is used to identify potential environmental contamination liabilities associated with the real property transactions and to support a FOST, FOSL, or an Environmental Condition of Property (ECOP). A FOST and FOSL are required for sales divesting title and leases. A FOSET is required for early transfer of contaminated property. An ECOP is required for transfers of jurisdiction between Federal agencies. Only an EBS is required for acquisitions. EBSs, FOSTs, FOSLs, and ECOPs shall be completed in accordance with DA Pamphlet (PAM) 200-1. Differences in requirements, staffing, and regulatory involvement for FOSTs and FOSLs at BRAC sites versus active sites are provided in DA PAM 200-1.

Normally the ER,A account will not be used for costs associated with real property transactions at active Army installations.

Sections 5.12 and 5.13 of this Guidance Manual provide more details on real property transactions.

### **1.5.9 Construction Site Environmental Surveys**

Environmental evaluation of military construction and family housing construction projects requires consideration of potential site contamination. The proponent of a construction site environmental survey should allocate funds for the survey out of Operation and Maintenance (O&M) accounts. If sites are discovered that would be eligible for evaluation or remediation through the IRP, then requirements may be included in the ER,A. Construction site restoration efforts will not normally be given higher funding priority just to meet a construction schedule; rather, they will be subject to the prioritization system as are all IRP projects. Hazardous waste sites may also be evaluated and remediated by projects that are programmed and budgeted in the applicable military construction account, in which case the projects will still be accomplished in accordance with the NCP and AR 200-1.

### **1.5.10 USEPA Munitions Rule and DoD Range Rule**

Section 107 of the Federal Facility Compliance Act of 1992 required the Administrator of the USEPA, in consultation with the DoD and appropriate state officials, to propose and promulgate regulations identifying when conventional and chemical military munitions become hazardous waste subject to regulation under the RCRA.

The Munitions Rule was published as a final rule on February 12, 1997, and was effective at the Federal level on August 12, 1997. States with authorized RCRA programs may choose to adopt or not adopt the provisions of the Munitions Rule that are less stringent than current RCRA.

On September 26, 1997, DoD proposed the Closed, Transferred, and Transferring Ranges Containing Military Munitions Rule (herein referred to as the Draft Proposed DoD Range Rule) in the Federal Register. This proposed rule identifies the process for evaluating appropriate response actions on Closed, Transferred, and Transferring Military Ranges. The response actions identified in the DoD Range Rule are parallel to the remedial action process and address safety, human health, and the environment.

See Appendix C of this Guidance Manual for more details on draft range response actions.

#### **1.5.11 Complying with the National Environmental Policy Act (NEPA)**

The NEPA requires all Federal agencies, including the Military Departments, to identify and consider possible environmental impacts of proposed operations and activities. Installations will incorporate the intent of NEPA into IRP/BRAC ERP planning, responses, reports, Decision Documents, and public involvement to ensure that a particular project does not negatively affect the environment. Impacts to cultural and natural resources are included in this analysis. NEPA provisions are to be applied at BRAC installations prior to relocating units and activities from one installation to another, and before transferring or leasing any real property. In some situations the military may be "categorically exempted" from performing this type of environmental analysis. If applicable, a categorical exclusion may be used when a parcel is to be transferred to another military department or Federal agency. A categorical exclusion may also be used for interim leases where there is no substantial change in land use. AR 200-2 provides specific information on the applicability of NEPA to the IRP/BRAC ERP process as well as on categorical exclusions.

At BRAC installations, it is DoD policy to implement measures to assure that all environmental analyses required by NEPA are to be completed to the extent practicable, within 12 months of the date the Local Redevelopment Authority (LRA) submits its final reuse plan for BRAC installations. See Fast Track Cleanup at Closing Installations (DoD, 1996) for DoD Guidance on Accelerating the NEPA Analysis Process for Base Disposal Decisions.

See Section 4.10 for more details on NEPA.

### **1.6 TERMINOLOGY**

CERCLA Section 120, "Federal Facilities," requires that terminology used to describe or otherwise identify actions carried out under environmental restoration programs shall be substantially the same as the terminology of regulations and guidelines issued by USEPA under CERCLA authority. Therefore, this Guidance Manual where appropriate, uses terms that are defined in CERCLA Section 101 and in the NCP. Terms of particular interest to restoration site managers are included in the Glossary of this Guidance Manual.

Several terms require additional explanation as given below:

### **1.6.1 Facility**

The term “facility” as defined in Section 101(9) of CERCLA can be applied to an entire military installation; to any improvements to property such as buildings, utilities, and earth works; or to a location where hazardous substances have been released or exist. The term is used in each of these senses in various sections of CERCLA. This term is similarly ambiguous in RCRA and its implementing regulations.

For the purposes of this Guidance Manual, the following terms will be used instead of “facility” in order to avoid this ambiguity:

- Installation - The real property owned or leased by the Army including a main base and any associated real properties identified by the same real property number. For the U.S. Army Reserve, the Regional Support Commands (RSCs) serve as the main base or installation. Army reserve facilities, for the purposes of environmental restoration, are considered sites and/or operable units.
- Site - A location on an installation’s property where hazardous wastes have been stored, disposed of, spilled, or otherwise released to the environment. A site includes air, land, and water resources where they are contaminated by the release, and it includes any structures, earth works, or equipment that are clearly associated with the release. Where multiple sites may contribute to contamination of an aquifer or a common land area, the contaminated resource may be identified as a site that is distinguished from the sites where the releases occurred. A site is the basic unit for planning and implementing response actions. However, neither this definition nor later discussions of response action procedures should preclude planning or implementing any actions for multiple sites if that will result in efficient use of time and resources. A site may have multiple sources of contamination.
- Solid Waste Management Unit (SWMU) - Any discernible waste management unit at a RCRA-permitted installation from which hazardous waste or hazardous constituents, as defined by RCRA, might migrate. The definition does not include accidental spills that might still be regulated under CERCLA and may be remediated through the IRP. Only past releases from SWMUs that also meet the definition of a CERCLA release are eligible for remediation through the IRP. Investigations and corrective action of SWMUs resulting from ongoing operations cannot be supported with restoration program funding. BRAC installations should support investigations and corrective action of SWMUs resulting from ongoing operations not related to BRAC closure with appropriate mission/operations funds.

### **1.6.2 Response/Response Action**

“Response” or “response action” is broadly defined in CERCLA. Any investigation, evaluation, decision-making, design, or implementation step taken for a hazardous substance release is covered by this definition. Four terms that are sub-categories of “response” need to be differentiated, i.e., “removal,” “remedial action,” “remedial action process,” and “operable unit.” Procedural requirements for each of these types of action differ substantially, but their CERCLA

definitions are almost as broad as the definition of “response” allowing them to be used almost interchangeably. Indeed, the terms are best defined by the procedural requirements that are imposed on them.

The CERCLA response program is divided into two broad categories: Removal Actions and Remedial Actions. Removal Actions are intended to be relatively quick actions designed to address imminent threats to human health and the environment. Remedial Actions are longer term activities that complete site cleanup if the Removal Action does not or cannot present a complete solution.

#### **1.6.2.1 Removals**

Time consuming and complex evaluation and decision-making steps, as seen in the RI/FS, are not required for removals. There is no presumption that removals will provide permanent solutions, although they may. Any actions taken as removals should satisfy one or more of the following tests:

- Imminent Threat - The site poses an imminent threat to public health. A threat is imminent if human exposure in excess of applicable human health criteria is predictable prior to implementation of a effective final remedial action. Determination of an imminent or potential health threat should be supported by a designated representative of the Office of the Surgeon General (OTSG).
- Source Control - The action either removes the source of contamination off-site or effectively contains it on-site so that continuing releases are prevented or reduced.
- Access Limitation - The action substantially reduces the possibility of human exposure to hazardous substances.

An RI/FS is not required for removals, though removal site evaluations may be needed (see NCP Section 300.410). Removals may be the only actions required for sites where hazardous substances have not dispersed into surface waters or groundwater and there is minimal dispersion into soil or sediments. However, dispersion has occurred from many IRP sites, and therefore many site measures will not qualify for implementation as removals. Any control measures needed in addition to or instead of removals will be classified as remedial actions.

Removal actions are intended to be relatively quick actions designed to address imminent threats to human health and the environment. The USEPA has categorized removal actions, as Emergency, Time-Critical, and Non-Time Critical.

- Emergency Removal Actions – Address immediate, unacceptable hazards.
- Time Critical Removal Actions – Responses to releases or threat of release, that pose such a risk to public health (serious injury or death), or the environment, that cleanup or stabilization actions must be initiated within six months.

- Non-Time Critical Removal Action – Actions initiated in response to a release or threat of a release that poses a risk to human health, welfare, or the environment. Initiation of removal cleanup actions may be delayed for six months or more. A Non-Time Critical Removal Action will begin with a removal site evaluation (40 CFR 300.410) which consists of the PA and, if warranted, a SI. An Engineering Evaluation and Cost Analysis (EE/CA) is then conducted, considering all applicable Federal and state Applicable or Relevant and Appropriate Requirements (ARARs). Use of permanent solutions and alternative treatment technologies must be considered. The EE/CA must meet NEPA equivalency and undergo a public comment period and include a responsiveness summary.

#### **1.6.2.2 Remedial Actions and Remedial Action Process**

A distinction will be made in this Guidance Manual between control measures to be implemented, which are called “remedial actions,” and the identification, evaluation, decision-making, and design and construction steps required to implement the control measures. These steps collectively are called the “remedial action process.” The remedial action process may lead to remedial actions, removals, or decisions to take no further action.

#### **1.6.2.3 Operable Units (OUs)**

Parts of remedial actions may be implemented as operable units. The NCP defines operable unit as “a discrete action that comprise an incremental step toward comprehensively addressing site problems” (NCP Section 300.5). An operable unit can be used to distinguish geographic areas, treatment technologies, or phases of response. The term operable unit is also used by USEPA to provide a standardized framework for measuring progress at its own sites as well as those of other responsible parties including Federal agencies. Normally these will have been identified in the Installation IAG or FFA. Only installations with NPL sites should be concerned with reporting the number of operable units to the USEPA. Activities defined at this level will be monitored as separate projects and reported to the Office of Management and Budget (OMB) separately.



## CHAPTER 2: AUTHORITIES AND RESPONSIBILITIES

### 2.1 DEPARTMENT OF DEFENSE

Many of the responsibilities and authorities created by CERCLA were assigned to the President. The President then delegated these responsibilities and authorities to the heads of various Executive agencies and departments in Executive Order 12580, Superfund Implementation, (President of the United States of America, January 23, 1987). In general, Executive Order 12580 delegated to the Secretary of Defense response authority "... with respect to releases or threatened releases where either the release is on or the sole source of the release is from any facility or vessel under the jurisdiction, custody, or control of ..."DoD.

Specific authorities under CERCLA delegated by Executive Order 12580 to the Secretary of Defense include:

<u>Authority</u>	<u>CERCLA Sections</u>
<ul style="list-style-type: none"><li>• Remove or provide remedial action in response to releases or potential releases of hazardous substances, contaminants, or pollutants.</li></ul>	104(a), 104(i)(11)
<ul style="list-style-type: none"><li>• Gather information and evaluate the existence and extent of releases and resulting threats to public health and the environment, and undertake other studies necessary to plan and direct response actions (compliance orders to obtain information issues under Section 104(e)(5)(a) must be issued with the concurrence of the Attorney General).</li></ul>	104(b) and (e)
<ul style="list-style-type: none"><li>• Select remedial actions in accordance with Section 121 (except as provided by NPL sites in Section 120(e)(4)(a)) of CERCLA and Section 10(a) of Executive Order 12580.</li></ul>	104(c)(4), 121
<ul style="list-style-type: none"><li>• Establish an Administrative Record upon which to base the selection of a response action and on which judicial review of removals or remedial actions will be based; make the record available to the public and ensure the opportunity for public participation in the selection of a response action.</li></ul>	113(k), 117(a) and (c)

<u>Authority</u>	<u>CERCLA Sections</u>
<ul style="list-style-type: none"> <li>Act as the natural resources trustee to assess damages for, injury to, destruction of, or loss of natural resources on, over, or under land managed by DoD.</li> </ul>	107(f)
<ul style="list-style-type: none"> <li>May agree to hold harmless and indemnify response action contractors.</li> </ul>	119 (a) and (c)
<ul style="list-style-type: none"> <li>Require compliance by response action contractors and subcontractors with Federal health and safety standards.</li> </ul>	104(f), 301(f)
<ul style="list-style-type: none"> <li>Ensure compliance with the Davis-Bacon Act (40 USC Section 276(a) et. seq.) regarding wages paid by response action contractors and subcontractors to laborers and mechanics.</li> </ul>	104(g)
<ul style="list-style-type: none"> <li>May authorize with concurrence of the Administrator of the Office of Federal Procurement Policy, the use of emergency procurement powers to effect the purposes of CERCLA, as well as regulations prescribing circumstances and procedures for use of such authority.</li> </ul>	104(h)
<ul style="list-style-type: none"> <li>Consider the availability of qualified minority firms in awarding contracts under CERCLA and provide to the Administrator of USEPA any requested information on minority contracting for its Section 105(f) report to Congress.</li> </ul>	105(f)
<ul style="list-style-type: none"> <li>Conduct a preliminary assessment of releases of a hazardous substance upon petition by any person who is or may be affected by the release.</li> </ul>	105(d)
<ul style="list-style-type: none"> <li>May, with the concurrence of the Attorney General, enter into and enforce consent orders with non-Federal potentially responsible parties (PRPs) for remediation of releases at DoD facilities not listed on the NPL.</li> </ul>	109(a)(1)(d) and (e), 122

### Authority

### CERCLA Sections

- Notify potentially injured parties who may have been harmed by releases from DoD facilities and promulgate rules and regulations for providing such notice.

111(g)

CERCLA, Section 211, requires that the Secretary of Defense identify an office within the Office of the Secretary to carry out the DERP. The Secretary of Defense has assigned the Office of the Deputy Under Secretary of Defense for Environmental Security (ODUSD(ES)) this mission and designated that ODUSD(ES):

- Has overall responsibility for carrying out the DERP.
- Provides policy and guidance to the DoD Components for implementing DERP, including establishing sub-elements and priorities.
- Provides oversight of DERP, including consistent program implementation across DoD Components, conducting In-Process Reviews (IPRs) of program execution, and establishing a DoD-wide management information system, containing site-specific data.
- Provides liaison to other Federal agencies and Congress, including preparing annual reports to Congress.
- Negotiates Defense and State Memorandum of Agreements (DSMOAs).

## **2.2 DEPARTMENT OF THE ARMY (DA) RESTORATION ORGANIZATION**

The DA implements DERP in accordance with CERCLA, the NCP, Section 211 of SARA, ODUSD(ES) policy and guidance, and AR 200-1. The DA implements BRAC in accordance with Public Law (PL) 100-526 (BRAC 88), PL 101-510 (BRAC 90), PL 102-426 (CERFA), ODUSD(ES) policy and guidance, and AR 200-1. Appendix D includes sections of AR 200-1 which are applicable to the IRP and the BRAC ERP.

The Army environmental organization for implementing restoration includes the following individuals and offices:

- The Assistant Secretary of the Army (Installations, Logistics, and Environment) (ASA(IL&E)) - has primary responsibility for the Army's environmental programs. Those responsibilities are carried out by the DASA(ESOH).
- DASA(ESOH) - establishes Army policy and guidance for implementation of the Army's environmental programs.

- Assistant Chief of Staff for Installation Management (ACSIM) - manages the Army's environmental programs; has centralized responsibility for policy pertaining to planning, programming, execution, and operation of Army installations; is the primary Army Staff agency responsible for directing, coordinating, and executing total Army environmental programs.
- Base Realignment and Closure Office (BRACO) - the Army's program manager for the BRAC program; and as such, is responsible for central management of the program, coordination of BRAC activities, development and execution of the BRAC Work Plan, prioritization of projects in the Work Plan, BRAC oversight, and execution of special projects and studies to ensure the responsiveness, efficiency, and continuity of the BRAC. The BRACO is an office within the ACSIM.
- Director of Environmental Programs (DEP) - implements Army policy for conduct of the Army's environmental programs and the FUDS program. The DEP reports to the ACSIM. The Office of the Director of Environmental Programs (ODEP) supports the DEP and is within the ACSIM.
- USAEC - the DA Field Operating Activity of the ACSIM, is the Army's program manager for the IRP; and as such, is responsible for central management of the program, coordination of IRP activities, development and execution of the IRP Obligation Plan, IRP oversight, execution reporting for the IRP Obligation Plan, and execution of special projects and studies to ensure the responsiveness, efficiency, and continuity of the IRP. USAEC supports BRACO with program management responsibilities.
- MACOMs - coordinate and provide IRP and BRAC project execution for installations in the Command, and consolidate and transmit budget priorities, requests, and progress reports from their installations to USAEC and BRACO. The Army National Guard Bureau (NGB) is the MACOM for IRP work conducted on Army National Guard Federally owned facilities.
- Installation Commanders - are responsible for executing IRP and BRAC projects and activities affecting their installation. For Federally owned Army National Guard facilities, the NGB, a MACOM, is the designated lead agency for the IRP. For the U.S. Army Reserve, the Regional Support Commands (RSCs) serve as the installation.
- USACE Divisions/Districts - in coordination with the MACOM and Installation Commander provide local execution of selected site identification and evaluation projects, and design and implementation steps for remedial actions and removals; have DoD-wide responsibility for the FUDS restoration program; and is the DoD proponent for the DSMOA program.

## 2.3 MAJOR ARMY COMMAND (MACOM) RESPONSIBILITIES

The MACOMs and, if applicable, their major subordinate commands (MSCs) are responsible for the execution, direction, and management of the IRP and BRAC ERP for installations under their command. MACOMs are responsible for coordinating and reviewing IRP and BRAC ERP projects for installations in their command, distributing funds, and consolidating and reporting technical and financial requirements from their installations to USAEC and BRACO. All requirements must meet DoD criteria for eligibility and sites must have Relative Risk Site Evaluations (RRSEs) completed in accordance with current Army guidance, except for BRAC compliance projects.

Along with providing quality assurance on all data submitted by installations, other MACOM responsibilities include the following:

- With respect to Defense Site Environmental Restoration Tracking System (DSERTS):
  - Ensure USAEC receives updates of DSERTS semi-annually for development of MACOMs budget allocations, the Report to Congress, In-Process Reviews, Cost-to-Complete (CTC) estimates, and the budget.
  - Consolidate installation data files into a MACOM file for submittal to the USAEC in a timely and accurate manner and concurrently forward the DSERTS Data Chain-of-Custody forms certifying data review.
- Reconcile CTC estimates with the DSERTS submission schedule.
- With respect to the IRP Obligation Plan and Reports:
  - Maintain a plan for obligation of the funds currently identified in the MACOM program. MACOM resource managers require parts of this plan for planning continuing resolution authority (CRA) and subsequent funds distribution. Obligation Plans are due quarterly to USAEC for overall management of IRP.
  - Ensure funds are obligated only against valid DSERT sites identified on the approved IRP Obligation Plan and are in accordance with Army quarterly goals.
  - Prepare Obligation Reports by site and ensure that the obligation data matches the Defense Financial Accounting System (DFAS), which is reported by phase.
  - Submit an annual memorandum on distribution of Annual Funding Plans (AFPs), and brief USAEC of its progress towards obligation of their AFPs and any additions to the IRP Obligation Plan.
  - Brief USAEC, other MACOMS, and the ODEP quarterly on program status in accordance with published guidance.

- With respect to the BRAC Work Plans:
  - Provide updated obligation information.
  - Provide a justification for adding new site requirements for execution.
  - Provide information to USAEC and BRACO upon request.
- Provide technical and financial guidance to all installations under their command. This will include information on advanced and innovative technologies for environmental remediation, restoration, and pollution prevention.
- Ensure USAEC receives Installation Action Plans (IAPs) or BRAC Cleanup Plans (BCPs)/BCP Abstracts which document IRP/BRAC ERP requirements, for development of the MACOMs budget allocation.
- Review and staff Decision Documents (DDs)/Records of Decision (RODs) for approval signature.
- Submit success stories to USAEC that concisely state progress made in carrying out environmental restoration activities at military installations. These success stories may be used in the Defense Environmental Cleanup Programs Annual Report to Congress.
- Participate with USEPA regional offices and the relevant State offices in the site evaluation process for USEPA's Hazard Ranking System (HRS) evaluation and final scoring.

## **2.4 INSTALLATION COMMANDER (IC) RESPONSIBILITIES**

Installation Commanders (ICs) are responsible for all activities regarding properties under their command. Environmental restoration activities may affect the mission of an installation, the health and welfare of the people who work and live on or near an installation, and the public's attitude toward an installation. ICs are, therefore, responsible for executing the IRP and BRAC ERP, which includes decision making and the accomplishment of appropriate activities. ICs are responsible for all activities and tenants regarding property and management issues.

The IC is accountable for the IRP/BRAC ERP at his/her installation. With MACOM concurrence, the IC has the option of determining the performer(s) for executing the IRP and BRAC ERP at his/her installation.

The IC should:

- Ensure that IRP/BRAC ERP activities are in compliance with applicable environmental regulations.
- Identify resources and capabilities needed for compliance and execution of the IRP and BRAC ERP.

- Designate a Remedial Project Manager (RPM) to ensure all work is accomplished in accordance with regulatory, DoD, and Army policy. The RPM is the primary point of contact between the installation and the MACOM, ATSDR, U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM), USAEC, Headquarters of the Department of the Army (HQDA), regulators, the public, and the IRP executor. See Section 2.4.1 for the RPM's responsibilities. At BRAC installations the BRAC Environmental Coordinator (BEC) or Fast Track Coordinator Point of Contact (FTC POC) is equivalent to the RPM. (Note: Throughout this Guidance Manual the term BEC is meant to include the FTC POC).
- Report discovered contamination releases first to the MACOM, then to appropriate regulatory agencies.
- Approve decisions to implement removals, operable units, and remedial actions in coordination with the MACOM, and for NPL sites, the ACSIM, USEPA, and the appropriate state regulatory authority.
- Approve decisions for Site Close-out in coordination with the MACOM.
- With respect to the IAP:
  - Submit an IAP through the MACOM to USAEC annually. In the case of the NGB, the MACOM acts as the installation and is responsible for preparing the IAP.
  - At the direction of the IC only, the IAP may be distributed to either regulators or the public in order to present the planned restoration activities for the installation.
  - Update the IAP whenever a change to the program occurs or as needed for presentation to regulators and interested public.
  - As appropriate, include ATSDR recommendations from the Public Health Assessment into the IAP.
- With respect to the BCP/BCP Abstract:
  - If required, submit the BCP through the MACOM to USAEC and BRACO.
  - Submit the BCP Abstract semi-annually through the MACOM to USAEC and BRACO.
  - Distribute the BCP/BCP Abstracts to regulators and the public in order to present the planned restoration activities for the installation.
- With respect to the DSERTS:
  - Include IRP/BRAC ERP requirements in the installation's submission.
  - Update IRP/BRAC ERP activities in the DSERTS semiannually.

- With respect to the IRP Obligation Plan, submit to USAEC, annually, a month-by-month funds obligation plan by DSERTS sites.
- Ensure Cost-to-Complete estimates are consistent with identified requirements reported through DSERTS.
- Communicate and negotiate with regulators and be the sole point of interface with all regulators. In this capacity:
  - Submit notifications, reports, and DDs to regulatory agencies and the public.
  - Participate in negotiations with regulatory agencies regarding any IRP/BRAC ERP activities or decisions that may affect the mission of the installation.
  - Provide information to support a mutually agreed-upon plan of IRP or BRAC ERP activities to enable the state to develop a DSMOA two year cost estimate and a six year cost plan.
- Execute the Community Relations Program. In this capacity:
  - Determine the interest and establish a Restoration Advisory Board (RAB) or Technical Review Committee (TRC), as appropriate, to review and comment on IRP/BRAC ERP actions and proposed actions, and designate a chairperson.
  - Approve and implement a Community Relations Plan (CRP) to involve the public in IRP/BRAC ERP activities;
  - Establish and maintain the public repository and Administrative Record.
  - Approve applicable Technical Assistance for Public Participants (TAPP) for community members of RABs/TRCs.
- Program and implement operation, maintenance, or monitoring activities that may be required after a response action to ensure its continued effectiveness.
- Approve any recommended RD&D activities proposed prior to initiation.
- With respect to the executing agency:
  - Assign tasks to the IRP/BRAC ERP executor describing the general scope of activities and provide project criteria, goals, and general milestones for restoration work. The executing agency must play a significant role in establishing milestones and schedules, to ensure that a realistic and workable schedule and sequence of events is established. Installations should obtain maximum competition when selecting project management services.



- As necessary or appropriate, negotiate a Memorandum of Agreement relating to procedures for the IRP or BRAC ERP. Appendix E contains a sample Memorandum of Agreement.
- Provide appropriate funds, in coordination with the MACOM/MSC, to the IRP/BRAC ERP executor for all work required and ensure that funds are allocated to eligible projects only. The last resource management office (installation or IRP/BRAC ERP executor) to receive restoration funds follows standard resource management practices to input obligation information, by installation and phase to the Defense Financial Accounting System (DFAS). The installation or IRP/BRAC ERP executor ensures their resource management office account for the fenced restoration funds in accordance with DFAS-IN Manual 37-100-XX (FY) and for the purposes defined in Title 10, U.S.C., Sections 2701-2709 and 2810.
- Approve proposed schedules and deadlines for all tasks and deliverables and provide comments and approvals to the IRP/BRAC ERP executor on items such as scopes of work and project documents in accordance with approved schedules.
- Provide guidance to the IRP/BRAC ERP executor concerning all interpretations of statutes and regulations that may affect performance of a task and document any deviations from DoD or Army policy. The installation is responsible for obtaining concurrence from their MACOM/MSC of any deviations from policy and guidance.
- Coordinate with the IRP/BRAC ERP executor to resolve any impediment to completion of the task on or before the stated deadlines and at or below the stated costs. If the IRP/BRAC ERP executor fails to meet a deadline resulting in a penalty to the Army, the installation is responsible for notifying the MACOM and the USAEC of the penalty and any associated costs.
- Provide support for activities on the installation such as access to sites, equipment, storage facilities, security, utilities, emergency response, communications, and field offices, as appropriate.
- If the IC believes the executor's performance is unsatisfactory, the IC contacts the commander of the executing agency and attempts to resolve the issues. Performance should be judged on the executor's ability to make use of the most cost-effective and technically efficient technologies available, in order to plan and meet schedules, communicate with the installation staff, provide quality reports, effectively use available funding resources, etc. If the quality of performance by the executor continues to be unsatisfactory, the IC, in concurrence with the MACOM, may transfer execution to another performer. Appropriate notifications shall be made to the executor and the MACOM so that funds can be recovered and redirected to the new performer, who will be required to implement a new action plan.

#### **2.4.1 The Remedial Project Manager's (RPM) or BRAC Environmental Coordinator's (BEC) Responsibilities**

The RPM will be designated for each active installation site requiring or potentially requiring a response action under the authority of CERCLA or, possibly, a RCRA Corrective Action. BRAC installations will likewise designate a BEC or a FTC POC. (Throughout this Guidance Manual the term "BEC" includes FTC POC.) The RPM/BEC is the prime contact for response actions at an installation. The RPM/BEC identifies the resources needed to effectively implement the remedial action process and CERCLA (RCRA Corrective Action) response actions. The RPM/BEC coordinates the work of installation staff, Army technical support agencies, and contractors in the accomplishment of IRP/BRAC ERP goals and policies.

In order to carry out these responsibilities, the RPM/BEC should, as a minimum:

- Understand and fulfill his/her role as the principal representative of the lead agency for remediation of releases.
- Maintain a relationship with the IC that facilitates communication and that recognizes the Commander's responsibilities for installation property, personnel, and missions.
- Understand the DSMOA and its implications for restoration response actions.
- Maintain relationships with designated representatives of regulatory agencies, facilitate communications, and recognize their legitimate environmental and public health interests.
- Remain informed of technical requirements, actions, and findings for sites at installations for which he/she is responsible, and be prepared to make informed decisions as the need arises.
- For sites or installations included on the NPL, maintain a written schedule of milestones and commitments in the ROD and Interagency Agreements (IAGs), and provide updates to the IC and MACOM.
- Provide copies of project documents for review and comment to appropriate Army proponents of the restoration such as the MACOM/MSC, USAEC, USACHPPM, ATSDR (for installations on or proposed for listing on the NPL), and ODEP.
- Provide copies of all RODs/DDs for review and concurrence to the MACOM/MSC, USAEC, and USACHPPM prior to release of funds for removal/interim/remedial action contracts.
- Coordinate through command channels for technical, procedural, policy, and funding advice and support.
- Submit technical plans, Statements of Work, Health and Safety Plans, contract specifications, deliverables (e.g., remediation documentation), and DDs to USAEC for review to ensure consistency with Army IRP/BRAC ERP policies and objectives and compliance with applicable legal requirements.

- Ensure the scope and level of effort of technical response actions are appropriate for the nature of the environmental and public health threats to be remedied.
- Be thoroughly familiar with AR 200-1, the NCP, and relevant state laws and regulations that may govern selection or implementation of response actions.
- Achieve sufficient knowledge of environmental, health and safety, engineering, public affairs, and administrative disciplines necessary to coordinate the IRP/BRAC ERP at the installation.
- Contact designated or alternate contracting offices to determine their capacity to support expected contract actions and to identify specific contracting office requirements.
- Review any proposed RD&D activities prior to request for approval.
- Review with the IC whether resources are available within the installation, via the Army or other Federal agencies, or via private sector contracts to achieve the response action requirements at the site.
- In cases where IRP/BRAC ERP response action contractors are being used, work with the Contracting Officer (KO) to ensure work is well planned and properly executed in a high quality manner.
- At BRAC installations, coordinate environmental response planning with the BCT and LRA.

## **2.5 EXECUTOR RESPONSIBILITIES**

The USACE executes the majority of Army restoration projects. The USACE established Hazardous, Toxic and Radiological Waste (HTRW) Design Districts for executing IRP and BRAC cleanup program activities. Each HTRW Design District works within specific geographic boundaries and every Army installation is supported by a geographically designated HTRW Design District. If the installation prefers using a USACE District outside of the designated geographic boundary, approval must be obtained from the Director of Military Programs at HQUSACE.

Installations and MACOMs also execute IRP/BRAC ERP projects. USACHPPM is available to execute specific projects such as specialized risk assessment and initial site assessment projects, particularly preliminary assessments, site inspections, and Relative Risk Site Evaluations (RRSEs).

Use of government agencies outside of the Army to execute restoration activities is discouraged except under unusual circumstances. As appropriate, Economy Act (31 USC 1538) procedures will be followed. Installations should contact their resource management and legal offices concerning Economy Act procedures. ATSDR (not an Army agency) through a Memorandum of Agreement (MOA) with DoD, performs Public Health Assessments for all installations on or proposed for the NPL. The MOA also authorizes ATSDR to perform Public Health Consultations as requested for any installation.

The executor:

- Assigns a Project Manager to be the primary point of contact for the installation RPM/BEC. The Project Manager serves under the authority and direction of the installation RPM/BEC in accordance with specific tasks.
- Provides estimates of costs and time requirements for performance of specific tasks forwarded by the installation. The estimates include in-house costs, specific contract and pricing data, and costs charged for contract supervisory and administrative services applicable to each FY for the contract administration. The executor utilizes historical cost data from analytical laboratories to ensure the executor can negotiate the lowest available price. The executor also plans laboratory analyses, as well as alternative methods, to minimize high cost "rapid turnaround" time requirements.
- Assesses the area of responsibility and proposes schedules for all deliverables and accomplishes all tasks within the time deadlines set forth by the installation. Tasks will not be considered complete until reviews are prepared for all work performed and accepted by the installation RPM/BEC.
- Recognizes the installation RPM/BEC as the principal point of contact with all environmental regulators, reports any contacts by regulators immediately, and attends all meetings as requested by the installation RPM/BEC.
- Requests specific approval from the installation RPM/BEC before the release for publication of any information gathered. The IRP/BRAC ERP executor will not release any information concerning the IRP and BRAC ERP without approval from the IC.
- Directs the executor's contracting offices to determine whether existing contracts can be utilized before initiating new contracts for environmental work.
- Ensures the executing Contracting Office obtains maximum competition when selecting project management services.
- Ensures funds are allocated to eligible projects only. The last resource management office (installation or IRP/BRAC ERP executor) to receive restoration funds follows standard resource management practices to input obligation information, by installation and phase to the DFAS. The installation or IRP/BRAC ERP executor ensures their resource management office account for the fenced restoration funds in accordance with DFAS-IN Manual 37-100-XX (FY) and for the purposes defined in Title 10, U.S.C., Sections 2701-2709 and 2810.

The installation and IRP/BRAC ERP executor may avoid disputes by entering into a Memorandum of Agreement (MOA). The MOA should identify the roles and responsibilities and extent of support the IRP/BRAC ERP executor will provide the installation. Appendix E contains a sample MOA.

## **2.6 KEY DOCUMENT APPROVAL AUTHORITY**

This section delineates the approval authorities for key restoration documents. The environmental restoration process is described in more detail in Chapter 3. ROD/DD approval, Completion Report approval, Interagency Agreement approval, and property transfer document approval authorities are provided.

Obtaining approvals for key documents while maintaining strict regulatory and interagency agreement schedules is critical. The approval process can also be very time consuming. The required sequence of actions to expedite the approval process is provided in detail in Section 4.1.2.

### **2.6.1 ROD/DD Approvals**

The Army has adopted the term “Decision Document” for the documentation of:

- A Removal, Interim Remedial Action (IRA), or RA decision at CERCLA non-NPL installations or RCRA Corrective Actions.
- Sites at NPL installations at which Removal or IRA decisions have been made.

The DD for sites which are not covered by an IAG/FFA need not be an elaborate document and in most cases will only be two to three pages in length for simple projects. The DD represents the Declaration Section of a ROD.

#### **2.6.1.1 ROD/DD Approval Authority**

Once the draft DD/ROD has been reviewed and concurrence has been received from the installation RPM/BEC and servicing public affairs and legal offices, MACOM, USAEC, and USACHPPM, the document should be forwarded with the concurrence for signature by the appropriate authority. Approval thresholds for all DDs, including NPL RODs, are described here. Signature authority for NPL RODs shall not be delegated below a General Officer (GO) or Senior Executive Service (SES) official. The only exception is that an IC, regardless of grade/rank, may sign NPL RODs selecting the no action alternative (see Table 2-1).

- The ACSIM or DASA(ESOH) (if the signature on an IAG/FFA) approves all DDs, including NPL RODs, greater than \$6 million. MACOMs should coordinate with HQDA on whether the ACSIM or DASA(ESOH) will sign a ROD and submit five copies of final RODs/DDs with concurrence, requiring HQDA approval for staffing to HQDA.

- The MACOM commander approves DDs, including NPL RODs, between \$2 million and \$6 million.
- The IC approves DDs, less than \$2 million, and No Action NPL RODs; however, if the IC approval action may be controversial to the USEPA Region, state regulatory agency, or the public in general, the MACOM, USAEC, and ODEP must be notified prior to approval.

**Table 2-1. Approval Authority for RODs/DDs**

	<b>DD</b>	<b>NPL RODs</b>
<b>No Action</b>	IC	IC
<b>Less Than \$2M</b>	IC	GO/SES
<b>\$2M To \$6M</b>	MACOM Commander	MACOM GO/SES
<b>Greater Than \$6M</b>	ACSIM	ACSIM/DASA(ESOH)

### 2.6.1.2 Approval Timelines

After preparing the ROD/DD, installations must allow sufficient time for staffing at each level in the chain-of-command.

- **Review and Concurrence:** Army policy for staffing RODs/DDs suggest that 60 to 90 days be allowed for technical review and concurrence to the installation staff, MACOM, USAEC, USACHPPM, and the regulators if appropriate.
- **Approval and Signature:** Army policy for staffing RODs/DDs suggests that 30 to 45 days be allowed for administrative staffing to the IC, MACOM commanders, and the ACSIM or DASA(ESOH) for approval and signature.

### 2.6.2 Completion Report Approvals

Prior to the formal conclusion of RA operations, the installation prepares a draft Completion Report with certification and documentation that:

- The RA project was conducted in accordance with the ROD/DD.
- The site no longer constitutes a threat to public health, welfare, or the environment.
- Further RAs are not necessary.

The draft Completion Report is forwarded through the chain-of-command to the ROD/DD approval authority. Following conceptual approval (and in coordination with regulatory agencies) the Completion Report is signed by the approval authority of the ROD/DD. If the ACSIM did not approve the ROD/DD, the Completion Report is forwarded through USAEC to the ACSIM certifying completion. If the Federal Facility Agreement requires signature of the appropriate regulatory official, the Army signs before the regulatory official. After the Completion Report has been certified complete, the installation prepares and transmits an information summary through command channels to DASA(ESOH).

### **2.6.3 Interagency Agreement Approvals**

For NPL sites, CERCLA requires IAGs/FFAs at the conclusion of the FS. DoD policy is for the NPL installation to enter into an IAG as soon as being listed on the NPL. Section 1.5.2 of this Guidance Manual provides greater detail on the IAG requirements.

IAGs/FFAs require the signature of the IC, as well as the signature of the DASA(ESOH).

### **2.6.4 Property Transfer Document Approvals**

Sections 1.5.8 and Section 5.12 of this Guidance Manual provide a discussion on documents required for real property acquisition, outgrant, and disposal. DA PAM 200-1 provides more details on the staffing guidance and approval authority for Finding of Suitability to Transfer (FOST), Finding of Suitability to Lease (FOSL), and Environmental Condition of Property (ECOP).

The installation, MSC, MACOM shall initiate, review, and approve EBSs.

The MACOMs have the authority to approve FOSTs, FOSLs, FOSETs, and ECOPs.

## CHAPTER 3: RESTORATION RESPONSE ACTION PROCESS

### 3.1 INTRODUCTION

This chapter summarizes the primary activities that are typically performed to implement restoration response actions. A response action involves either a short-term removal action or a long-term remedial response that may include, but is not limited to: removing hazardous materials from a site for treatment or containment; containing the waste safely on-site; treating the waste on-site; and identifying and removing the source of contamination and halting further migration of contaminants.

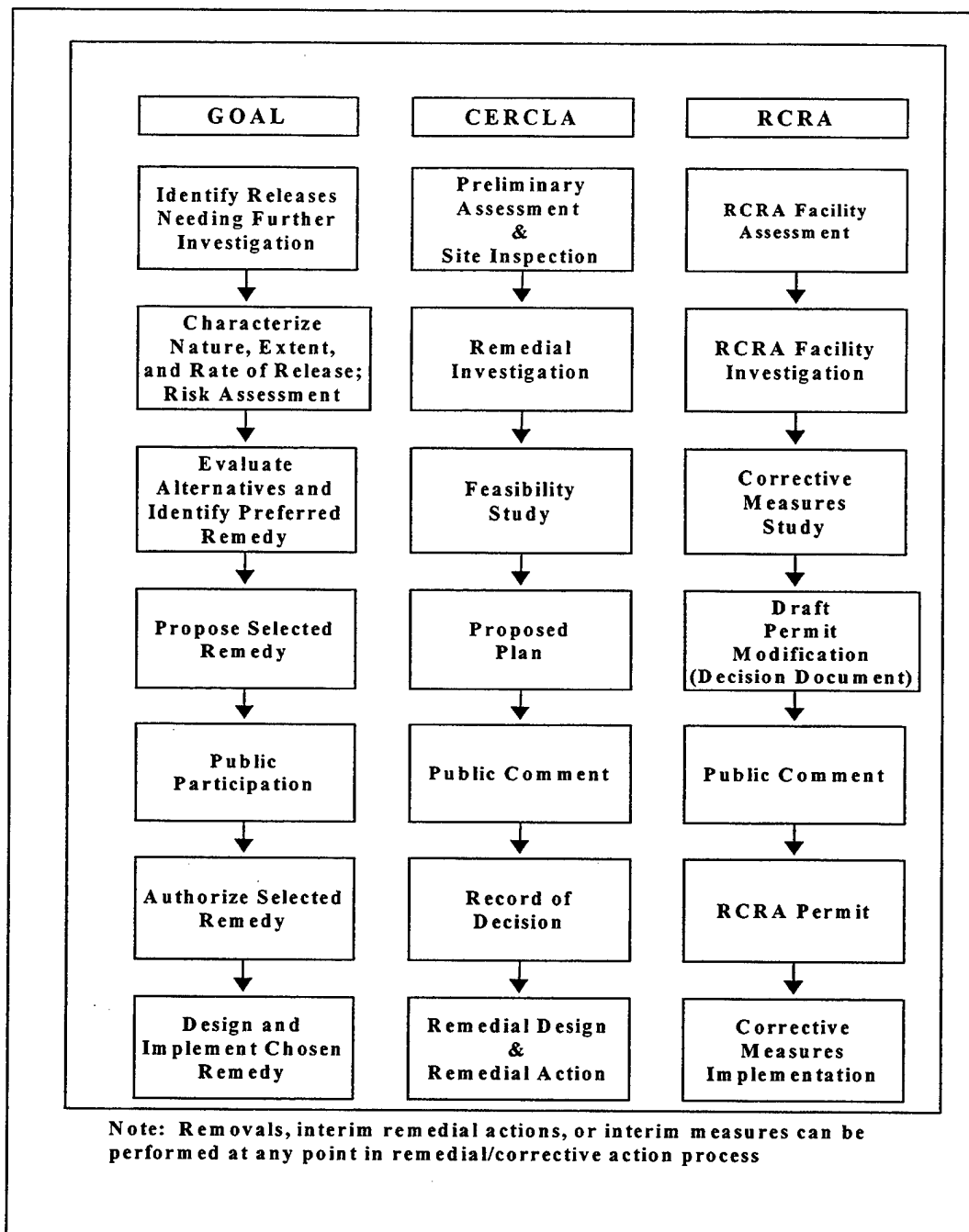
All environmental restoration response actions shall, to the greatest extent possible, be in accordance with the provisions of the National Contingency Plan (NCP), codified in 40 CFR Part 300. The NCP addresses the methods for discovering, evaluating, remediating, and determining the criteria for appropriate cleanup, and means of assuring remedial action measures are cost effective. The actual sequence and scope of activities must be tailored to site conditions and Environmental Restoration, Army (ER,A) or Base Closure Account (BCA) funding priorities. Some guidelines that will help increase the usefulness of this guidance are listed below:

- Activities are described here as if a single site is being remediated. However, multiple sites grouped according to site type, potential for a common remedy, proximity, contamination of a common resource, or funding priority can be evaluated or remedied together.
- Some activities (Site Characterization is a good example) may have to be performed in steps or repeated in order to achieve their purpose.
- Considerable activity has already occurred for many Army IRP/BRAC ERP sites. While all of the procedural requirements of CERCLA/SARA and the revised NCP may not have been complied with, the results of past remedial activities should be built upon and augmented, not abandoned. Augmentation is not addressed here, but should be considered in complying with procedural and substantive objectives in future activities for a site.
- ER,A and BCA funding priorities may influence how many sites can be addressed together and in what time frame.

These and other factors may have to be considered in planning response actions for individual sites or the overall installation remedial response program.

Many environmental restoration projects are being carried out under state RCRA authority. Although the basic CERCLA and RCRA processes are similar, different terms apply. This Guidance Manual primarily uses the CERCLA and NCP process to define restoration procedures. Appendix F provides a more detailed comparison of the CERCLA and RCRA actions. Figure 3-1 summarizes the CERCLA/RCRA comparison.





**Figure 3- 1. Comparison of RCRA and CERCLA Processes**

### 3.2 RESPONSE ACTION ALTERNATIVES

Four primary response action alternatives may be used individually or in combination at a site:

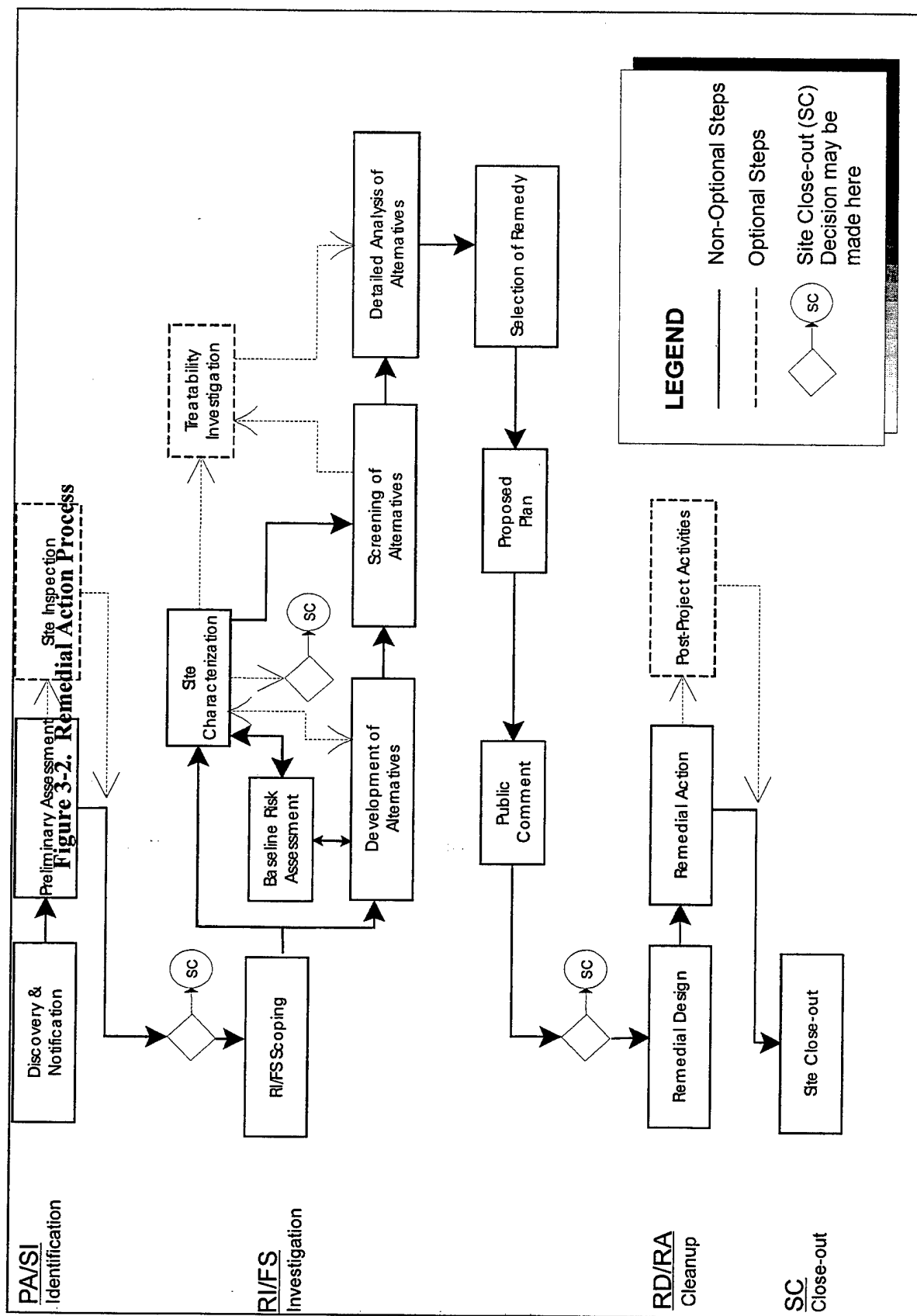
- Remedial action process - is the primary alternative for most IRP/BRAC ERP sites. It provides a full, careful progression through the four phases of identification, investigation, cleanup, and close-out as shown in Figure 3-2. A remedial action tends to be long-term in nature and involves response actions that are consistent with a permanent remedy that is taken in lieu of, or in addition to, a removal action. Operable Units (OUs) may be used within the remedial action process to allow actions to be taken on a site in a progressive, incremental approach to address problems.
- Removal actions - are normally intended to quickly control or remove the source of a release, limit exposure of humans or the environment to a release, or respond to an imminent threat. Though preferable, it is not necessary that removals either fully address the problems posed by a site or provide solutions that are fully complementary to other remedial actions at the site. Removal actions are taken in response to emergency conditions (e.g., discovery of a burial site for hazardous waste drums) or on a short-term or temporary basis.
- Monitoring - is used to track the presence, migration, or threat posed by contaminants at a site. Monitoring may be used at a site between response actions or when no other response action is appropriate until information or site status changes.
- Site Close-out - involves the procedures necessary to complete actions at a site once investigation and cleanup of a site are complete. Site Close-outs are also initiated when a decision to take no further action is made. Site Close-outs are completed when all regulatory agency concurrences are gained, all reporting and document handling requirements are met, and NPL deletion (when applicable) has occurred.

The use of one response action alternative does not limit the use of another alternative. Figure 3-3 shows some of the potential interrelationships of response action alternatives.

### 3.3 REMEDIAL ACTION PROCESS

The phases, steps, and sequence of the remedial action process are illustrated in Figure 3-2. Traditionally the remedial action process has four phases:

- Identification or Preliminary Assessment/Site Inspection (PA/SI) (discussed in Section 3.4) includes the steps of discovering, assessing, and reporting on a potential site.



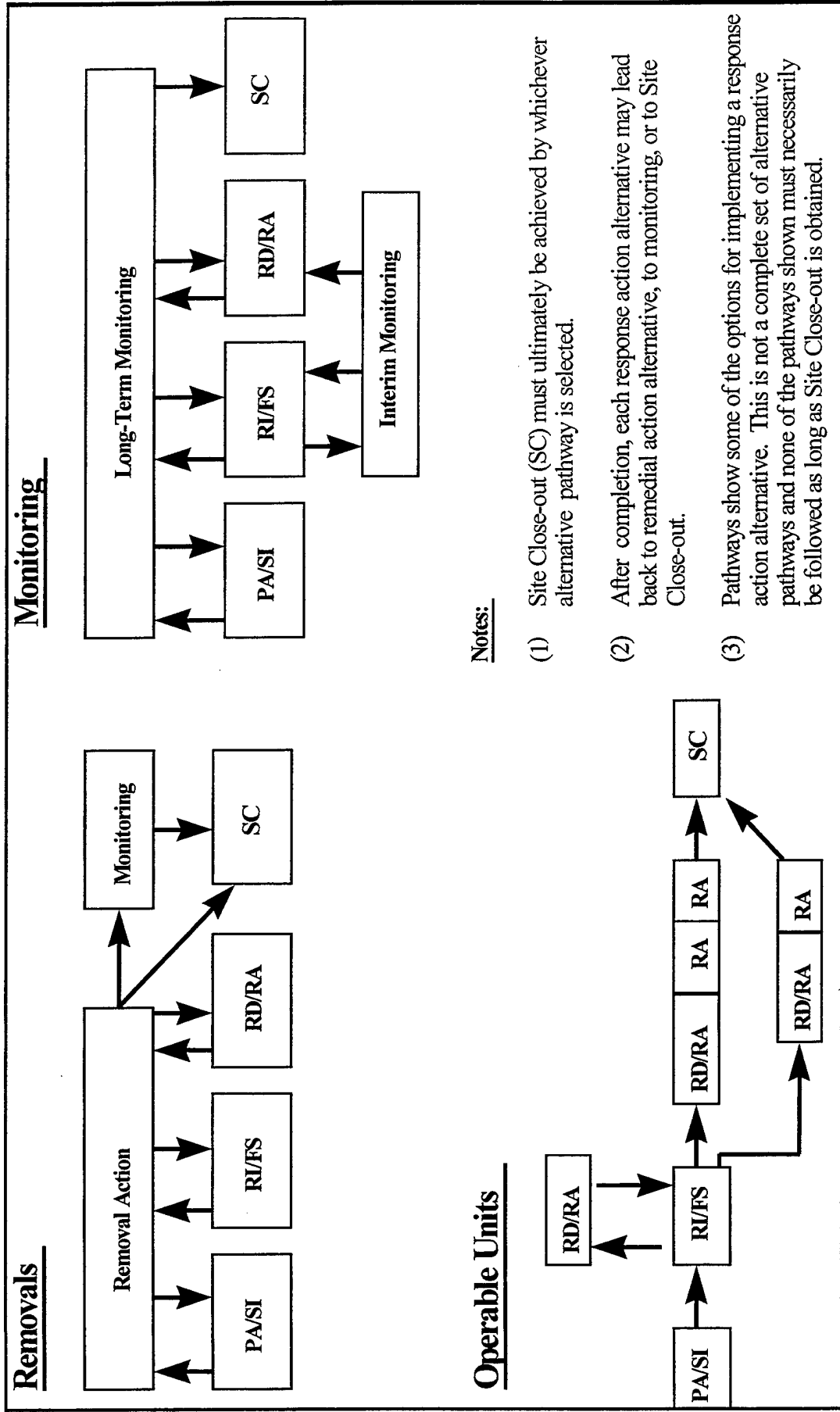


Figure 3-3. Response Action Alternatives Showing Relationship to Remedial Action Process

- Investigation or Remedial Investigation/Feasibility Study (RI/FS) (discussed in Section 3.5) includes the following steps:
  - Analyzing in detail the nature of the site, contaminants, and potential receptors.
  - Determining the regulatory requirements and clean-up objectives to be applied to the site.
  - Identifying, analyzing, and selecting the remedial action approach for cleaning up the site.
- Cleanup or Remedial Design/Remedial Action (RD/RA) (discussed in Section 3.6) includes the detailed engineering design step for a selected remedial action, the implementation of that remedial action, and any ongoing post-construction activities necessary to fully meet the cleanup objectives.
- Site Close-out (SC) (discussed in Section 3.7) is the fourth phase and final step in the remedial action process and includes the steps to take when the other phases of remedial activity at a site have been completed and no further action is warranted.

### **3.4 IDENTIFICATION PHASE**

The Identification Phase includes the three steps of Discovery and Notification, Preliminary Assessment (PA), and Site Inspection (SI). Potential sites may be identified by a variety of means. Once identified, sites should go through a formal rating process conducted during the PA step or, if necessary, the SI step.

#### **3.4.1 Discovery and Notification**

IRP and BRAC ERP sites have been discovered by records searches and during normal installation maintenance and construction activities. Records searches, called Initial Installation Assessments (IIAs), have been conducted for Army installations that historically handled hazardous materials and which appeared on the initial Federal Agency Hazardous Waste Compliance Docket (referred to as the Docket, see Section 5.5). Most IRP sites discovered to date were identified during the IIAs. BRAC sites are frequently discovered during the Environmental Baseline Survey. Although almost all Army installations have been assessed, a number of Reserve and National Guard sites may yet need to be assessed. Upon discovery, such potential sites are screened to identify release situations warranting further remedial response consideration.

CERCLA requires that hazardous waste sites on Federal properties be reported to USEPA for inclusion in the Docket. The Installation Spill Contingency Plan (ISCP), usually conducted in accordance with the Clean Water Act, and the installation's RCRA Part B permits, may specify additional notification and coordination actions for newly-created and newly-discovered sites.

Newly-created sites (i.e., those resulting from ongoing operations) should be responded to by installation personnel in accordance with the ISCP including specified notification and coordination actions. Information appropriate for inclusion in the Docket should be transmitted through the chain of command to the appropriate USEPA regional office. Newly-created sites are not eligible for ER,A funds. They should be managed by the installation and its MACOM in accordance with Federal and state Clean Water Act requirements, the installation's RCRA permit, if applicable, or in accordance with the NCP and this Guidance Manual using operating (OMA or R&D) funds.

In the course of normal construction activities, remedial investigations, and remedial actions, sites may be discovered which have existed for some time. Generally, these sites will be included in the IRP and are eligible for ER,A funds. Response should be in accordance with the ISCP if the newly discovered site poses an immediate threat. For all newly discovered, pre-existing sites, information appropriate for inclusion in the Docket should be transmitted through the chain of command to the appropriate USEPA regional office and to USAEC.

Figure 3-4 summarizes elements of the discovery and notification step.

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Figure 3-4. Alternate Ele

PROCESSES:	DISCOVERY & NOTIFICATION	PRELIMINARY ASSESSMENT	SITE INSPECTION
<b>Purposes:</b>	<ul style="list-style-type: none"> <li>Characterize release from available information.</li> <li>Report releases in excess of reportable quantity to the National Response Center, appropriate State regulatory agency, USEPA Region, Natural Resource Trustee.</li> </ul>	<ul style="list-style-type: none"> <li>Eliminate from further consideration those releases that pose neither threat nor potential threat to public health, welfare, or the environment.</li> <li>Determine need for removal actions.</li> <li>Collect data to characterize the release for effective, rapid initiation of RI/FS, BRAC.</li> </ul> <p>Note: An Environmental Baseline Survey is equivalent to the Preliminary Assessment, if acceptable to the regulatory agency.</p>	<ul style="list-style-type: none"> <li>Eliminate from further consideration those releases that pose neither threat nor potential threat to public health, welfare, the environment.</li> <li>Determine need for removal actions.</li> <li>Collect data to characterize the release for effective, rapid initiation of RI/FS.</li> </ul>
<b>Potential Subsequent Action:</b>	<ul style="list-style-type: none"> <li>Preliminary Assessment.</li> <li>Removal.</li> </ul>	<ul style="list-style-type: none"> <li>No Action and Site Close-out.</li> <li>SI.</li> <li>RI/FS.</li> <li>Removal.</li> </ul>	<ul style="list-style-type: none"> <li>No Action and Site Close-out.</li> <li>RI/FS.</li> <li>Removal.</li> <li>Monitoring.</li> </ul>
<b>Tasks:</b>	<ul style="list-style-type: none"> <li>Determine appropriate response action.</li> </ul>	<ul style="list-style-type: none"> <li>Records Search.</li> <li>Photo Interpretation.</li> <li>Site Visit.</li> <li>Preliminary HRS Scoping Package.</li> </ul>	<ul style="list-style-type: none"> <li>Prepare Work Plan, SAP, and H</li> <li>Establish Data Quality Objective</li> <li>Sample soils, sediments, groundwater, surface water as appropriate.</li> </ul>
<b>Documentation:</b>	<ul style="list-style-type: none"> <li>Contact reports.</li> <li>Correspondence.</li> </ul>	<ul style="list-style-type: none"> <li>PA Report or EBS.</li> <li>USEPA PA Report.</li> </ul>	<ul style="list-style-type: none"> <li>Work Plan, SAP, and HSP.</li> <li>SI Report.</li> <li>HRS Scoring Package.</li> </ul>
<b>Additional Site Management Activities:</b>		<ul style="list-style-type: none"> <li>Notify Natural Resources Trustee if damage expected.</li> <li>Submit HRS scoring package to USEPA if data are sufficient.</li> <li>Comment on USEPA proposal to include site on NPL, as appropriate.</li> </ul>	<ul style="list-style-type: none"> <li>Submit HRS scoring package to USEPA.</li> <li>Comment on USEPA proposal to include site on NPL.</li> </ul>
<b>USEPA/State Activities:</b>	<ul style="list-style-type: none"> <li>Enter site in Federal Agency Hazardous Waste Compliance Docket (USEPA).</li> </ul>	<ul style="list-style-type: none"> <li>HRS Scoring (if data are sufficient).</li> <li>NPL Proposal.</li> <li>NPL Listing.</li> </ul>	<ul style="list-style-type: none"> <li>HRS Scoring.</li> <li>NPL Proposal.</li> <li>NPL Listing.</li> </ul>



**Figure 3-4. Alternate Elements of Remedial Action Process Steps**

	<b>SITE INSPECTION</b>	<b>RI/FS SCOPING</b>	<b>SITE CHARACTERIZATION</b>	<b>DEVELOPMENT OF ALTERNATIVES</b>
Initial assessment, or initiation of remedial action	<ul style="list-style-type: none"> <li>Eliminate from further consideration those releases that pose neither threat nor potential threat to public health, welfare, or the environment.</li> <li>Determine need for removal actions.</li> <li>Collect data to characterize the release for effective, rapid initiation of RI/FS.</li> </ul>	<ul style="list-style-type: none"> <li>Describe type and content of studies needed to undertake response actions.</li> <li>Determine need for removal actions.</li> <li>Determine appropriate response mechanisms and authorities.</li> <li>Identify preliminary RI/FS and environmental assessment study areas.</li> <li>Set priorities for implementation of removal actions, operable units and RI/FS phases.</li> </ul>	<ul style="list-style-type: none"> <li>Determine extent of threat of human health or the environment.</li> <li>Provide basis for determining types of response actions to be considered.</li> </ul>	<ul style="list-style-type: none"> <li>Determine need for operable units</li> <li>Identify potential remedial alternatives.</li> </ul>
	<ul style="list-style-type: none"> <li>No Action and Site Close-out.</li> <li>RI/FS.</li> <li>Removal.</li> <li>Monitoring.</li> </ul>	<ul style="list-style-type: none"> <li>Site Characterization.</li> <li>Development of Alternatives.</li> <li>Removal Action.</li> <li>Operable Unit.</li> </ul>	<ul style="list-style-type: none"> <li>Additional field investigations.</li> <li>Development of alternatives (may be concurrent).</li> <li>Screening of alternatives.</li> </ul>	<ul style="list-style-type: none"> <li>Screen alternatives.</li> </ul>
Investigation and assessment	<ul style="list-style-type: none"> <li>Prepare Work Plan, SAP, and HSP.</li> <li>Establish Data Quality Objectives.</li> <li>Sample soils, sediments, groundwater, surface water as appropriate.</li> </ul>	<ul style="list-style-type: none"> <li>Prepare Community Relations Plan.</li> <li>Determine preliminary ARARs.</li> <li>Begin to formulate likely remedial alternatives.</li> <li>Develop SAP and Worker HSP.</li> </ul>	<ul style="list-style-type: none"> <li>Implement SAP.</li> <li>Redefine RI/FS study area.</li> <li>Review ARARs.</li> <li>Prepare Baseline Risk Assessment.</li> </ul>	<ul style="list-style-type: none"> <li>Identify potential treatment technologies.</li> <li>Identify containment requirements for residues.</li> <li>Evaluate technologies.</li> <li>Assemble suitable remedial alternative.</li> <li>Identify action-specific alternatives.</li> </ul>
	<ul style="list-style-type: none"> <li>Work Plan, SAP, and HSP.</li> <li>SI Report.</li> <li>HRS Scoring Package.</li> </ul>	<ul style="list-style-type: none"> <li>Community Response Plan.</li> <li>SAP.</li> <li>Worker HSP.</li> <li>Work Plan for RI/FS.</li> </ul>	<ul style="list-style-type: none"> <li>RI Report.</li> <li>Baseline Risk Assessment (may be combined with RI Report).</li> </ul>	
Decision to initiate remedial action	<ul style="list-style-type: none"> <li>Submit HRS scoring package to USEPA.</li> <li>Comment on USEPA proposal to include site on NPL.</li> </ul>	<ul style="list-style-type: none"> <li>Establish local information repository and administrative record.</li> <li>Request preliminary State ARARs.</li> <li>Establish TRC or RAB.</li> <li>For sites proposed or listed on NPL, begin negotiations on IAGs.</li> </ul>	<ul style="list-style-type: none"> <li>Request state to verify ARARs.</li> </ul>	
Implementation	<ul style="list-style-type: none"> <li>HRS Scoring.</li> <li>NPL Proposal.</li> <li>NPL Listing.</li> </ul>	<ul style="list-style-type: none"> <li>Review Federal ARARs.</li> <li>Provide state ARARs (state).</li> <li>Negotiate IAG for NPL Sites (USEPA).</li> </ul>	<ul style="list-style-type: none"> <li>Verify ARARs (state).</li> </ul>	

## of Remedial Action Process Steps

<b>RI/FS SCOPING</b>	<b>SITE CHARACTERIZATION</b>	<b>DEVELOPMENT OF ALTERNATIVES</b>	<b>SCREENING OF ALTERNATIVES</b>
Describe type and content of studies needed to undertake response actions. Determine need for removal actions. Determine appropriate response mechanisms and authorities. Identify preliminary RI/FS and environmental assessment study areas. Set priorities for implementation of removal actions, operable units and RI/FS phases.	<ul style="list-style-type: none"> <li>Determine extent of threat of human health or the environment.</li> <li>Provide basis for determining types of response actions to be considered.</li> </ul>	<ul style="list-style-type: none"> <li>Determine need for remedial action or operable units</li> <li>Identify potential remedial action alternatives.</li> </ul>	<ul style="list-style-type: none"> <li>Narrow list of potential remedial alternatives for detailed analysis.</li> </ul>
Site Characterization. Development of Alternatives. Removal Action. Operable Unit.	<ul style="list-style-type: none"> <li>Additional field investigations.</li> <li>Development of alternatives (may be concurrent).</li> <li>Screening of alternatives.</li> </ul>	<ul style="list-style-type: none"> <li>Screen alternatives.</li> </ul>	<ul style="list-style-type: none"> <li>Field investigations.</li> <li>Treatment Investigation.</li> <li>Detailed Analysis of Alternatives.</li> </ul>
Prepare Community Relations Plan. Determine preliminary ARARs. Begin to formulate likely remedial alternatives. Develop SAP and Worker HSP.	<ul style="list-style-type: none"> <li>Implement SAP.</li> <li>Redefine RI/FS study area.</li> <li>Review ARARs.</li> <li>Prepare Baseline Risk Assessment.</li> </ul>	<ul style="list-style-type: none"> <li>Identify potential treatment technologies.</li> <li>Identify containment/disposal requirements for residual or untreated wastes.</li> <li>Evaluate technologies.</li> <li>Assemble suitable technologies into alternative remedial actions.</li> <li>Identify action-specific ARARs.</li> </ul>	<ul style="list-style-type: none"> <li>Screen alternatives for effectiveness, implementability and cost.</li> </ul>
Community Response Plan. SAP. Worker HSP. Work Plan for RI/FS.	<ul style="list-style-type: none"> <li>RI Report.</li> <li>Baseline Risk Assessment (may be combined with RI Report).</li> </ul>		
Establish local information repository and administrative record. Request preliminary State ARARs. Establish TRC or RAB. For sites proposed or listed on NPL, begin negotiations on IAGs.	<ul style="list-style-type: none"> <li>Request state to verify ARARs.</li> </ul>		<ul style="list-style-type: none"> <li>Notify state of final alternatives for action-specific ARARs.</li> </ul>
Review Federal ARARs. Provide state ARARs (state). Negotiate IAG for NPL Sites (USEPA).	<ul style="list-style-type: none"> <li>Verify ARARs (state).</li> </ul>		

Figure 3-4. Alternate Elements o

PROCESSES:	TREATABILITY INVESTIGATION	DETAILED ANALYSIS OF ALTERNATIVES	SELECTION OF REMEDY	
<b>Purposes:</b>	<ul style="list-style-type: none"> <li>Obtain data for detailed evaluation of alternatives.</li> </ul>	<ul style="list-style-type: none"> <li>Describe, evaluate and compare alternatives.</li> </ul>	<ul style="list-style-type: none"> <li>Select remedial action.</li> </ul>	<ul style="list-style-type: none"> <li>P</li> <li>b</li> <li>A</li> <li>P</li> </ul>
<b>Potential Subsequent Actions:</b>	<ul style="list-style-type: none"> <li>Detailed analysis of alternatives.</li> </ul>	<ul style="list-style-type: none"> <li>Selection of Remedy.</li> <li>Describe alternatives in sufficient detail for analysis.</li> <li>Evaluate and compare alternatives according to: <ul style="list-style-type: none"> <li>Overall protection of human health and environment.</li> <li>Compliance with ARARs.</li> <li>long-term effectiveness and permanence.</li> <li>Reduction of toxicity, mobility, or volume through treatment.</li> <li>short-term effectiveness.</li> <li>Implementability.</li> <li>cost.</li> <li>state acceptance.</li> <li>Community acceptance.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Site Close-out.</li> <li>Monitoring.</li> <li>Removal Action.</li> <li>Operable Unit.</li> </ul>	<ul style="list-style-type: none"> <li>R</li> </ul>
<b>Tasks:</b>	<ul style="list-style-type: none"> <li>Literature surveys on treatment technologies.</li> <li>Bench tests and pilot scale treatability tests.</li> <li>Collection of additional field data.</li> </ul>		<ul style="list-style-type: none"> <li>Select remedial action.</li> </ul>	<ul style="list-style-type: none"> <li>R</li> <li>Pl</li> <li>C</li> <li>ne</li> <li>Pr</li> <li>an</li> </ul>
<b>Documentation:</b>	<ul style="list-style-type: none"> <li>Remedial Investigation Report.</li> </ul>	<ul style="list-style-type: none"> <li>Feasibility Study or RI/FS.</li> </ul>	<ul style="list-style-type: none"> <li>Proposed Plan.</li> <li>Notice of Proposed Plan availability.</li> <li>Public hearing transcript.</li> <li>ROD or DD including responses to comments to Proposed Plan.</li> <li>Notice of ROD/DD availability.</li> </ul>	<ul style="list-style-type: none"> <li>R</li> <li>Pl</li> <li>D</li> <li>de</li> <li>RI</li> <li>Re</li> </ul>
<b>Additional Site Management Activities:</b>		<ul style="list-style-type: none"> <li>Request state to certify identification of ARARs.</li> </ul>	<ul style="list-style-type: none"> <li>Public hearing on Proposed Plan.</li> </ul>	
<b>USEPA/State Activities:</b>	<ul style="list-style-type: none"> <li>Review Remedial Investigation Report (state and USEPA).</li> </ul>	<ul style="list-style-type: none"> <li>Review FS or RI/FS (state and USEPA).</li> <li>Certify identification ARARs (state)</li> </ul>		

### 3-4. Alternate Elements of Remedial Action Process Steps (Continued)

SELECTION OF REMEDY	REMEDIAL DESIGN	REMEDIAL ACTION	POST-PROJECT ACTIVITIES	
<ul style="list-style-type: none"> <li>Select remedial action.</li> </ul>	<ul style="list-style-type: none"> <li>Prepare design, specifications and bid documents for the Remedial Action.</li> <li>Prepare RD/RA Work Plan.</li> </ul>	<ul style="list-style-type: none"> <li>Install remedial technologies.</li> <li>Implement land use controls.</li> <li>Program post-project activities.</li> </ul>	<ul style="list-style-type: none"> <li>Ensure continued compliance with project goals.</li> </ul>	<ul style="list-style-type: none"> <li>De</li> <li>av</li> <li>en</li> <li>De</li> <li>Int</li> <li>au:</li> </ul>
<ul style="list-style-type: none"> <li>Site Close-out.</li> <li>Monitoring.</li> <li>Removal Action.</li> <li>Operable Unit.</li> </ul>	<ul style="list-style-type: none"> <li>Remedial Action.</li> </ul>	<ul style="list-style-type: none"> <li>Post-project activities.</li> <li>Long-term operations.</li> <li>Long-term monitoring.</li> <li>Site Close-out.</li> </ul>	<ul style="list-style-type: none"> <li>Site Close-out.</li> <li>Reinitiation of response actions, if necessary.</li> </ul>	<ul style="list-style-type: none"> <li>No</li> <li>Re</li> <li>sub</li> <li>ne</li> </ul>
<ul style="list-style-type: none"> <li>Select remedial action.</li> </ul>	<ul style="list-style-type: none"> <li>Revise Community Relations Plan, as necessary.</li> <li>Conduct pilot scale testing, as necessary.</li> <li>Prepare design, specifications, and bid documents.</li> </ul>	<ul style="list-style-type: none"> <li>Field activity management.</li> <li>Implement land use restrictions.</li> </ul>	<ul style="list-style-type: none"> <li>Periodic review of compliance with project goals.</li> <li>Operation and maintenance of long-term operations equipment.</li> </ul>	<ul style="list-style-type: none"> <li>Pre</li> <li>doc</li> <li>MA</li> <li>sign</li> <li>For</li> <li>deli</li> </ul>
<ul style="list-style-type: none"> <li>Proposed Plan.</li> <li>Notice of Proposed Plan availability.</li> <li>Public hearing transcript.</li> <li>ROD or DD including responses to comments to Proposed Plan.</li> <li>Notice of ROD/DD availability.</li> </ul>	<ul style="list-style-type: none"> <li>Revised Community Relations Plan.</li> <li>Design, specifications, and bid documents for Remedial Action.</li> <li>RD/RA Work Plan.</li> <li>Remedial Design Fact Sheet.</li> </ul>	<ul style="list-style-type: none"> <li>Worker HSP.</li> <li>SAP for post-project activities.</li> <li>Contractor documentation of: <ul style="list-style-type: none"> <li>Work performed, equipment installed, site worker logs and visitor logs.</li> <li>Compliance with worker HSP.</li> <li>Compliance with Data Quality Objectives.</li> </ul> </li> <li>"As-built" drawings and list of equipment.</li> <li>O&amp;M Manual for electro-mechanical equipment and/or monitoring.</li> </ul>	<ul style="list-style-type: none"> <li>Monitoring reports.</li> <li>Compliance reports.</li> </ul>	<ul style="list-style-type: none"> <li>DD</li> <li>Tec</li> <li>nee</li> </ul>
<ul style="list-style-type: none"> <li>Public hearing on Proposed Plan.</li> </ul>		<ul style="list-style-type: none"> <li>Program O&amp;M resources for post-project activities.</li> </ul>		<ul style="list-style-type: none"> <li>Invo</li> <li>Dist:</li> <li>place</li> <li>Rec</li> <li>Publ</li> </ul>
			<ul style="list-style-type: none"> <li>Review contractor monitoring reports and 5-year compliance reviews as required.</li> </ul>	<ul style="list-style-type: none"> <li>Revi</li> <li>(USI</li> <li>USE</li> <li>non-</li> </ul>

### 3.4.2 Preliminary Assessment (PA)

A PA is an initial analysis of existing information to determine if a release of hazardous substances may be serious enough to require additional investigation or action. The PA is the first phase in the process of determining whether a site is releasing, or has the potential to release hazardous substances, pollutants, or contaminants to the environment, and whether the release requires a response action.

An EBS is prepared at each BRAC installation where excess property is available for reuse. The EBS documents and identifies real property that can be considered uncontaminated. In addition to documenting uncontaminated property, the EBS describes the environmental condition of the remaining property according to its relative status in the restoration process. The steps for conducting an EBS are outlined in AR 200-1.

At BRAC installations an EBS is equivalent to a PA. However, a PA may still be required in addition to the EBS, especially for NPL sites. An EBS normally includes compliance related issues that affect the closure of the installation. On the other hand, even though an installation may have had a PA, an EBS is normally conducted immediately after the installation is identified for BRAC. The decision for submittal of an EBS in lieu of a PA is usually made by the USEPA on a case-by-case basis.

The purposes of a PA are to:

- Describe the source and nature of release and evaluate the type, magnitude, and likelihood of threats to public health and welfare or to the environment.
- Screen and eliminate sites where remedial action is not required.
- Identify sites that require emergency response.
- Determine the need for SI or RI/FS.
- Gather existing data to facilitate HRS scoring.
- Set priorities for site inspections.

Types and sources of available information used to prepare the PA include:

- Interviews with currently employed or retired personnel.
- Records of past waste generation and site management practices.
- Aerial photographs.
- Perimeter inspection of potential sites.

- On-site inspections, if this can be done safely.
- Any previous sampling results.

PAs should be conducted and the results reported as indicated in Guidance for Performing Preliminary Assessments Under CERCLA (USEPA, 1991). A removal action may be taken during a PA if it is found that an immediate or imminent threat to public health or welfare exists at the site. Figure 3-4 summarizes the elements of the PA step.

The conclusion of a PA will be a determination to:

- Implement a removal if an imminent threat is recognized, if there are effective methods to control the source or potential source of contamination, or if the removal will substantially reduce the possibility of human exposure to hazardous substances. This option does not preclude also initiating a SI or a RI/FS.
- Initiate a RI/FS if it is obvious that a remedial action will be needed.
- Close-out the site if reasonable efforts fail to indicate that a release of hazardous substances, pollutants, or contaminants has occurred or may occur.
- Initiate a SI if information is insufficient to support another determination.

### **3.4.3 Site Inspection (SI)**

A SI is initiated if the preliminary assessment indicates a suspected release of hazardous substances that may threaten human health or the environment. The SI is optional step. Installations may use the SI to develop new information needed to decide whether to initiate a removal, begin a RI/FS, or terminate response activities. If the need for a remedial action is apparent from a PA, installations may begin scoping the RI/FS without delay.

In addition to sampling, the SI usually includes a reconnaissance of the site's layout, surrounding topographical features, and the location of nearby populations in order to document any risks the site may pose. Site inspections are divided into two tiers: screening site inspections (SSIs) and listing site inspections (LSIs).

The goals of the SSI are to:

- Collect additional data to calculate a better preliminary hazard ranking score.
- Establish priorities among sites most likely to qualify for the National Priorities List (NPL).
- Identify the most critical data requirements for a listing site inspection.

Those sites that are most likely to qualify for the NPL are candidates for LSIs, which addresses the data requirements for HRS scoring. LSIs also are used to support the scoping phase of the RI, and development of the remedial work plan.

USEPA will use the HRS score to determine eligibility for the NPL (using a threshold of 28.5). The Army considers HRS scores in establishing priorities for initiating a RI/FS. However, the Army will continue the remedial action process for sites with low HRS scores, at a lower priority, if they pose threats to public health, welfare, or the environment.

Preparation for a SI, as with any other on-site activities, will require the conduct of concurrent activities as described in Chapter 4. A Work Plan, Site Health and Safety Plan (HSP), and a Sampling and Analysis Plan (SAP) may need to be developed. If the SAP requires off-post sampling, verbal request and approval will be obtained from HQDA through the MACOM, in accordance with AR 200-1, Section 11-10. If the field activities could intrude on sensitive environmental resources, these resources should be assessed in accordance with NEPA.

Results of SIs should be documented in a report that, at a minimum:

- Redefines the source and nature of the release.
- Concludes whether Site Close-out, removal, or a RI/FS is warranted.
- Includes completed USEPA SI Form 2070-13 (USEPA, 1981), if required by the USEPA regional office.

Figure 3-4 summarizes elements of the SI step.

### **3.4.4 USEPA Revised Hazard Ranking System (HRS)**

The original USEPA Hazard Ranking System was revised in December 1991. HRS is used by USEPA to evaluate sites (USEPA often rates entire military installations) for inclusion on the NPL. HRS scores are based on data collected from the PA or PA/SI and submitted by the Installation Commander to the USEPA. A preliminary HRS score may be developed during the Identification Phase. The USEPA may determine that the data are insufficient to rank sites or installations. Army installations should cooperate with the USEPA in developing HRS scores, by providing requested data. USAEC will assist the installation in preparing PA/SI documents when requested by the Installation Commander.

HRS generates scores based on three factor categories (likelihood of a release, waste characteristics, and affected targets) as they pertain to the possible migration of hazardous substances via groundwater, surface water, air, and soil pathways. A composite score (HRS score) based on separate scores calculated for each of the pathways is determined. An HRS score of 28.5 or greater on a scale of 0 – 100 makes a site eligible for inclusion on the NPL. The USEPA has developed the PREscore software program to assist with the computation of site scoring. If an installation is proposed for the NPL, based on the HRS score, the HRS scoring package should be reviewed by the installation. Comments to the USEPA regarding potential

NPL listing should be based on the actual situation, and the threat that has been recognized by the Army. For additional information on calculating an HRS score, refer to Hazard Ranking System Guidance Manual (USEPA, 1992).

### 3.5 INVESTIGATION PHASE

The purpose of the Investigation Phase is to determine the nature and extent of the threat presented by a site and, if warranted by site sampling data and a Baseline Risk Assessment, to evaluate proposed remedies.

The RI is conducted to obtain data about the site and waste characteristics, their hazards, and routes of exposure. Information pertinent to treatability of wastes and the performance of treatment processes may also be developed.

During the FS, potential remedial alternatives are developed and screened, and the most promising alternatives are evaluated by specified criteria.

Figure 3-5 illustrates key decision points in the RI/FS process.

Incorporated within the Investigation Phase is a Baseline Risk Assessment (see Section 4.8). The Baseline Risk Assessment summarizes and interprets RI data, identifies contaminant transport pathways and receptors, and assesses actual or potential harm to public health or the environment. It defines the need for remedial action and serves to focus remedial action alternatives.

The end product of a RI/FS is the selection of a preferred remedial action that:

- Has demonstrated needs supported by valid site data and a Baseline Risk Assessment.
- Is judged to be the best means of meeting those needs in light of the following nine criteria required by the NCP:
  - Overall protection of human health and the environment.
  - Compliance with cleanup requirements.
  - Long-term effectiveness and permanence.
  - Reduction of toxicity, mobility, or volume through treatment.
  - Short-term effectiveness.
  - Implementability.
  - Cost.
  - State acceptance.
  - Community acceptance.



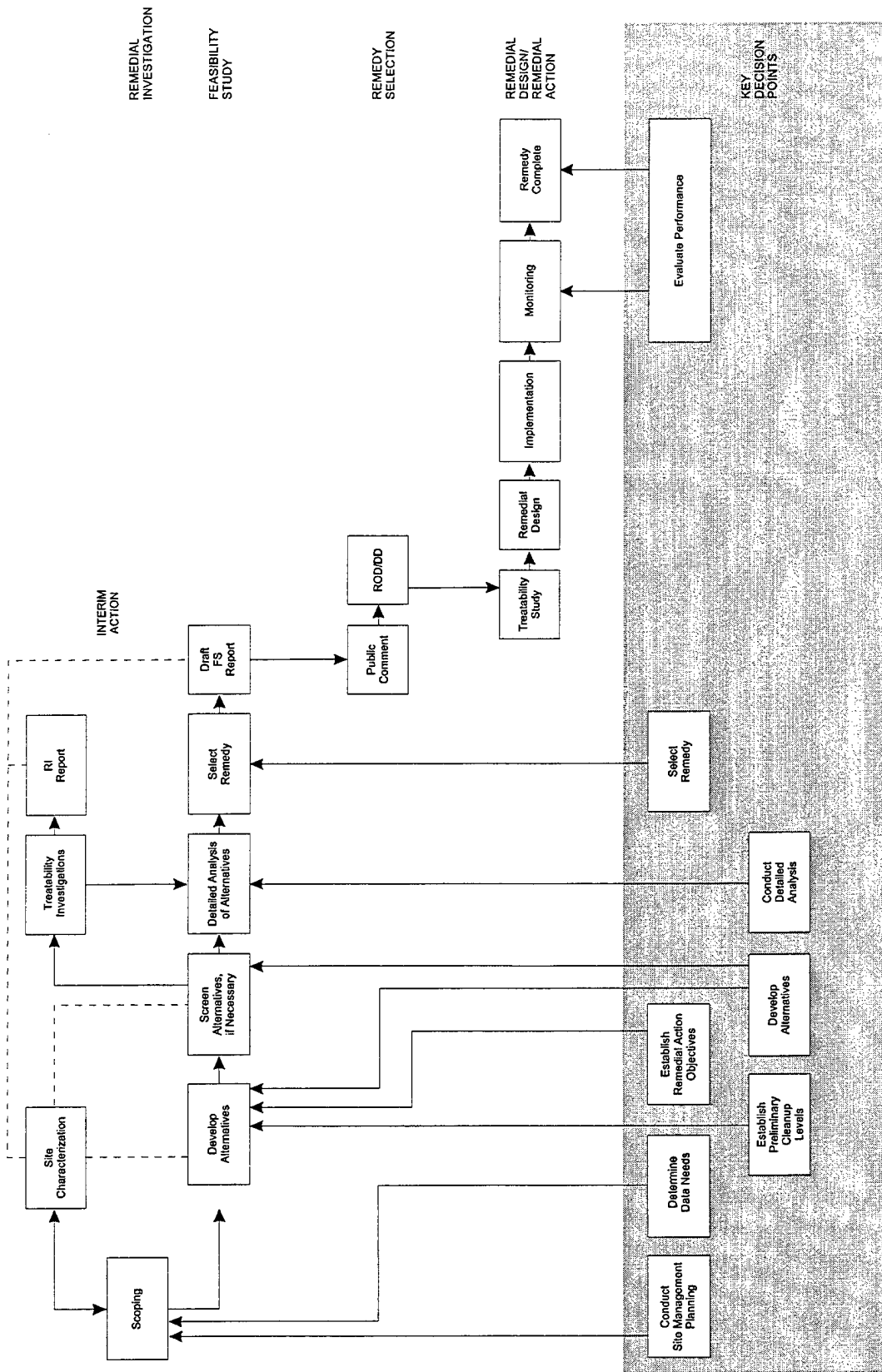


Figure 3-5. Key Decision Points in the RI/FS Process

The process for achieving that end product is described in this Section. Note that virtually all of the concurrent requirements discussed in Chapter 4 will have to be addressed during an RI/FS to successfully achieve the end product.

The final two steps of an RI/FS (detailed analysis of alternatives, and selection of remedy) include the preparation of a Proposed Plan which is provided for public and regulatory agency comment, and a public meeting to discuss the preferred alternative. Once inputs from these presentations are addressed, the RI/FS is concluded by selection of the remedy. The selection is documented by a Record of Decision (ROD) for NPL sites and by a Decision Document (DD) for non-NPL sites.

The seven RI/FS steps as defined by CERCLA, and summarized below, may be implemented in an iterative manner depending on the site's complexity and the availability of a clearly superior alternative. Scoping, Site Characterization, and Detailed Analysis of Alternatives are the steps most likely to require repetition or reconsideration:

For additional information on conducting an RI/FS, refer to Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA (USEPA, 1988).

### **3.5.1 RI/FS Scoping**

The following activities are normally conducted during the first step, Scoping:

- Identify the RI/FS study area. Delineate, on a conservative basis from available information, the media that may be contaminated and populations and resources that may be exposed to the contamination. Properties, transportation routes, treatment and disposal facilities, and any environmental resources that may be used for or directly impacted by potential remedial actions should be identified as the basis for evaluating location-specific Applicable or Relevant and Appropriate Requirements (ARARs) and environmental impacts of alternatives.
- Determine appropriate response mechanisms and authorities. In coordination with the MACOM, state regulatory agency, regional office of USEPA, and the Installation Commander, develop an agreement on which state and Federal laws and regulation are applicable. The agreement should also include the roles that each party will play in studying the site, as well as the decision-making process.
- For sites proposed for or listed on the NPL, begin negotiations with USEPA on the IAG.
- Initiate confirmatory data collection if needed, but not previously accomplished.
- Identify likely response scenarios and potentially applicable technologies and operable units that may address site problems.

- Describe the scope of subsequent RI/FS steps. Prepare the statement of work (SOW), a Work Plan and a Site HSP. Coordinate with USACHPPM regarding data requirements to support human health risk assessments and prepare a SAP for the Site Characterization step. Obtain HQDA verbal approval through the MACOM in advance for any necessary off-post sampling, in accordance with AR 200-1, Section 11-10. Site specific data needs, the evaluation of alternatives, and documentation of the selected remedy should reflect the scope and complexity of the site problems being addressed.
- Determine whether the remedial action is likely to be a major Federal action or will have significant environmental impacts, and refer to AR 200-2, Chapter 2-2a(8)(a) and (b) for possible NEPA exemption. Ensure that the CERCLA documents will be prepared in accordance with NEPA (see AR 200-1, Section 15-2).
- Identify need for and set priorities for removals, operable units, and continuing monitoring requirements while the RI/FS is being conducted.
- Identify preliminary Federal contaminant- and location-specific ARARs based on available data and confirmatory data. Submit a request to the state regulatory agency to obtain state ARARs.
- Conduct community interviews and prepare a Community Relations Plan (CRP), which will outline public involvement protocols and corresponding response plans.
- Establish a RAB or TRC.
- Initiate an Administrative Record and develop an information repository.

Figure 3-4 lists the elements of RI/FS Scoping. Figure 3-6 shows, in a flow diagram, how key elements are related.

An RI/FS seldom will be so predictable that all activities can be accurately forecast during the initial scoping. The installation should be prepared to adjust the scope of activities as new information is developed. Establishing decision points and In-Process Reviews at which the scope of ongoing and future activities will be reexamined may be helpful in managing contracts and in communicating progress to other interested parties. Likely decision points are:

- At the conclusion of each round of site sampling during Site Characterization.
- When the Baseline Risk Assessment is prepared.
- At the conclusion of Screening Alternatives.
- After publication of the Initial Release Health Assessment by ATSDR.
- During or after bench or pilot scale testing of technologies.
- After implementation of removals or operable units.

A final RI Report and Risk Assessment should be prepared following the implementation of RI activities.

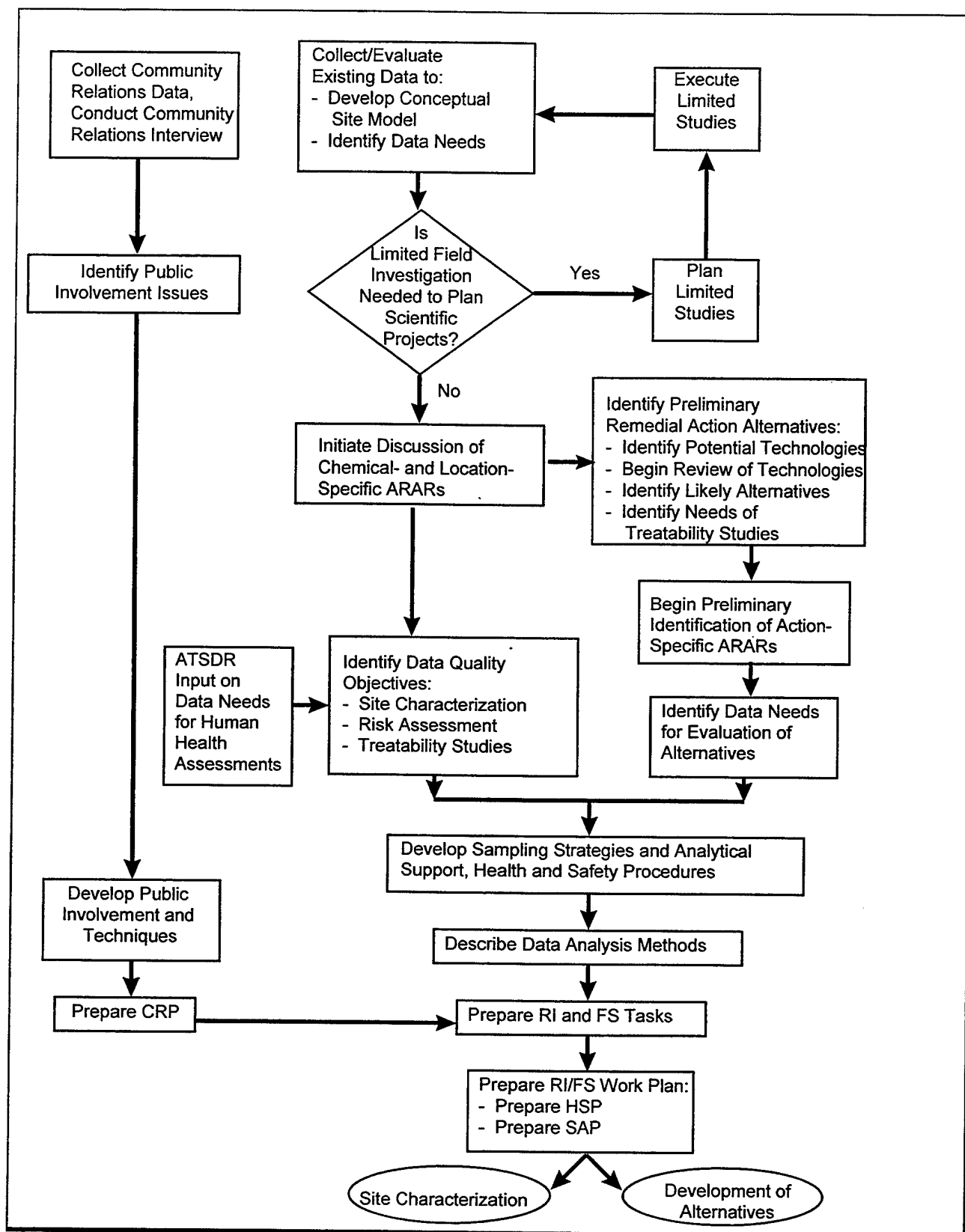


Figure 3-6. Flow Diagram for RI/FS Scoping

### 3.5.2 Site Characterization

During Site Characterization, the SAP is implemented. Field data are obtained and analyzed to assess the nature of any threats the site poses to human health or the environment and to support the analysis and design of potential response actions. The major steps in Site Characterization include:

- Collecting soil, sediment, groundwater, surface water, and air samples as specified in the SAP.
- Analyzing samples in the laboratory.
- Evaluating laboratory results to characterize the site.
- Determining the adequacy of data for developing and evaluating remedial alternatives.
- Developing a Baseline Risk Assessment.

Results of the Site Characterization are documented in a RI report. The recommended format for this report is presented in Table 3-1.

Results may indicate that the threat is more immediate than previously understood, in which case removals or operable units (see Section 3.6.4) may be initiated. However, if the Baseline Risk Assessment shows that a significant threat does not exist, then the installation may prepare a no action ROD or a DD for NPL site. For non-NPL sites, a Site Close-out document and DD should be prepared. Depending on existing agreements with regulators, response actions may be required to meet all ARARs.

Figure 3-4 lists the elements of Site Characterization. Figure 3-7 shows how key elements are related.

**Table 3-1. Recommended Remedial Investigation Report Format**

Executive Summary	
1.	Introduction
1.1	Purpose of Report
1.2	Site Background
1.2.1	Site Description
1.2.2	Site History
1.2.3	Previous Investigations
1.3	Report Organizations
2.	Study Area Investigation
2.1	Includes field activities associated with site characterization. These may include physical and chemical monitoring of some, but not necessarily all, of the following:
2.1.1	Surface Features (topographic mapping, etc.) (natural and manmade features)
2.1.2	Contaminant Source Investigations
2.1.3	Meteorological Investigations
2.1.4	Surface-Water and Sediment Investigations
2.1.5	Geological Investigations
2.1.6	Soil and Vadose Zone Investigations
2.1.7	Ground-Water Investigations
2.1.8	Human Population Surveys
2.1.9	Ecological Investigations
2.2	If technical memoranda documenting field activities were prepared, they may be included as an appendix and summarized in this report chapter.
3.	Physical Characteristics of the Study Area
3.1	Includes results of field activities to determine physical characteristics. These may include some, but not necessarily all, of the following:
3.1.1	Surface Features
3.1.2	Meteorology
3.1.3	Surface-Water Hydrology
3.1.4	Geology
3.1.5	Soils
3.1.6	Hydrogeology
3.1.7	Demography and Land Use
3.1.8	Ecology
4.	Nature and Extent of Contamination
4.1	Presents the results of site characterization, both natural chemical components and contaminants in some, but not necessarily all, of the following media:
4.1.1	Sources (lagoons, sludges, tanks, etc.)
4.1.2	Soils and Vadose Zone
4.1.3	Groundwater
4.1.4	Surface Water
4.1.5	Air
5.	Contaminant Fate and Transport
5.1	Potential Routes of Migration (i.e., air, groundwater, etc.)
5.2	Contaminant Persistence
5.2.1	If they are applicable (i.e., for organic contaminants), describe estimated persistence in the study area environment and physical, chemical, and/or biological factors of importance for the media of interest.

**Table 3-1. Recommended Remedial Investigation Report Format (Continued)**

5.3	Contaminant Migration
5.3.1	Discuss factors affecting contaminant migration for the media of importance (e.g., sorption onto soils, solubility in water, movement of groundwater, etc.).
5.3.2	Discuss modeling methods and results, if applicable.
6.	Baseline Risk Assessment
6.1	Human Health Evaluation
6.1.1	Exposure Assessment
6.1.2	Toxicity Assessment
6.1.3	Risk Characterization
6.2	Environmental Evaluation
7.	Summary and Conclusions
7.1	Summary
7.1.1	Nature and Extent of Contamination
7.1.2	Fate and Transport
7.1.3	Risk Assessment
7.2	Conclusions
7.2.1	Data Limitations, Baseline Risk Assessment Analysis of Uncertainty, and Recommendations for Future Work
7.2.2	Recommended Remedial Action Objectives
8.	References/Bibliography
Appendices	
A.	Technical Memoranda on Field Activities (if available)
B.	Analytical Data and QA/QC Evaluation Results
C.	Risk Assessment Methods

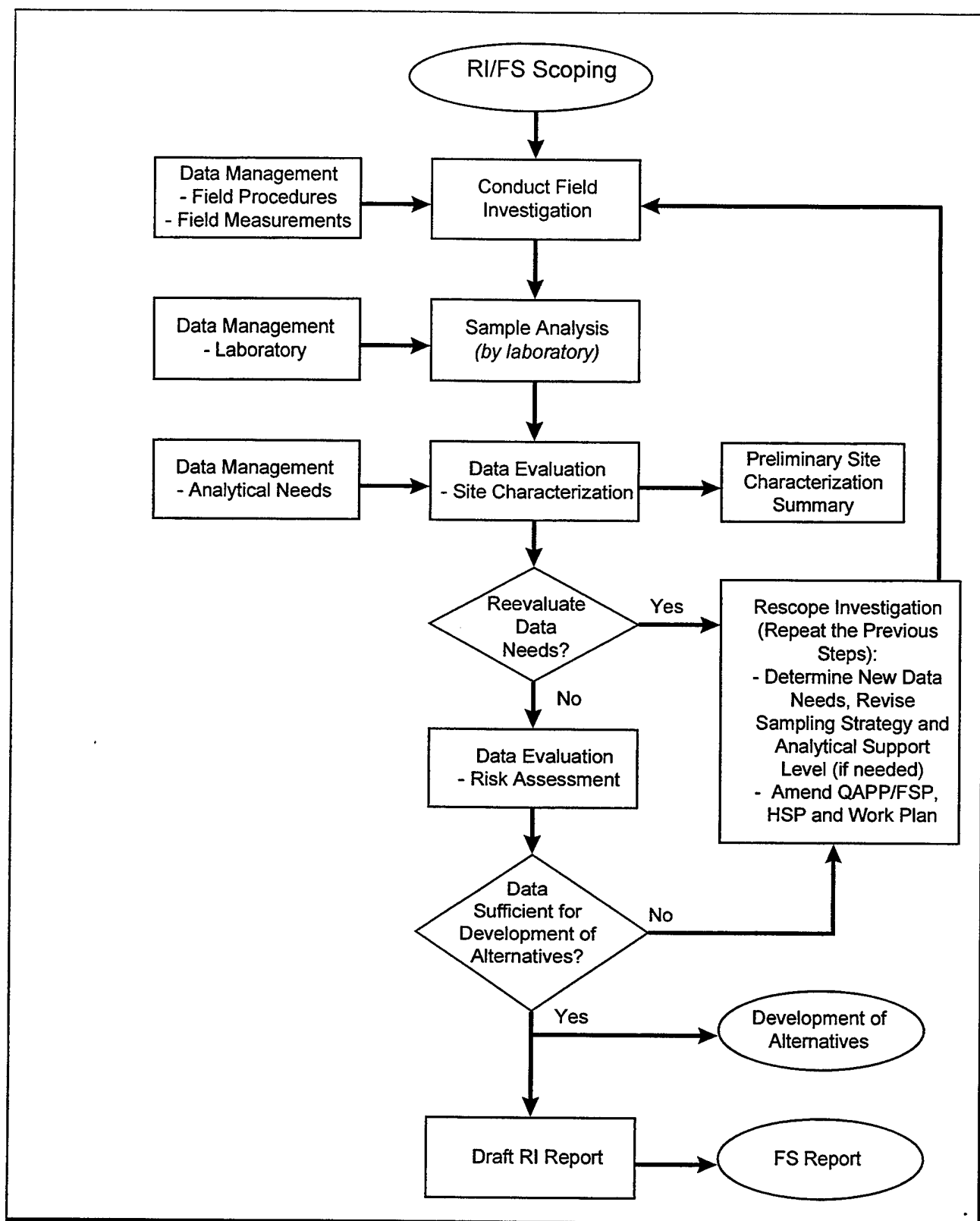


Figure 3-7. Flow Diagram for Site Characterization



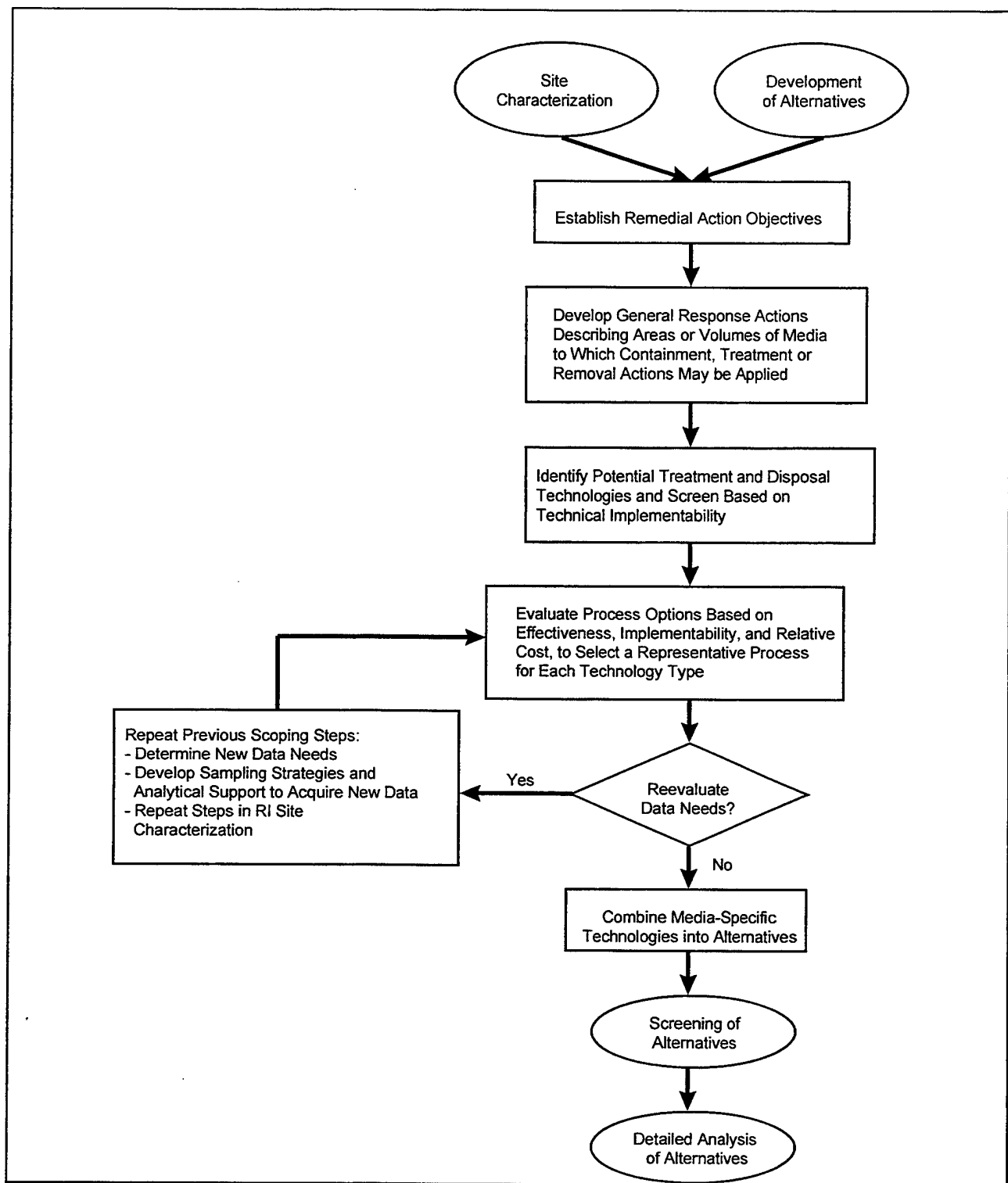
### 3.5.3 Development of Alternatives

Depending on the number, spatial distribution, and complexity of sites in the RI/FS study area, a number of specific control technologies may ultimately be combined in the selected remedy. The process of identifying, evaluating, and selecting the remedy begins with a review of control technologies and institutional controls (such as land use restrictions) that are appropriate to the site(s) and the threat the site poses.

Appendix G of this Guidance Manual lists control technologies that should be considered. Technologies that are not appropriate for use on any site in the RI/FS study area may be eliminated from further consideration. To show that such technologies were reviewed, they may be listed in an appendix to the Feasibility Study with brief statements indicating why each was considered to be inappropriate.

Appropriate technologies and institutional controls are then combined on a site-by-site basis to formulate complete, potentially protective alternatives for permanent remediation.

Figure 3-4 lists the elements of the Develop Alternatives step and Figure 3-8 shows how key elements are related.



**Figure 3-8. Flow Diagram for the Development of Alternatives**

### 3.5.4 Screen Alternatives

Alternatives identified in the first step of the FS may need to be screened using three broad criteria in order to select a reasonable number of alternatives for detailed analysis:

- Effectiveness in reducing the threat.
- Implementability.
- Cost.

At this stage, costs should be order-of-magnitude, however the cost should include long-term operation, maintenance, and long-term monitoring as appropriate. Factors such as constructability; expected opposition from the public; impact on the installation's mission; compatibility with planned land uses; and availability of material, equipment, technical expertise, or off-site treatment and disposal facilities may be considered in evaluating implementability. Demonstrated ability of component technologies to achieve design goals should be addressed in evaluating effectiveness. Adverse environmental impacts that are predictable at this stage should also be considered in evaluating effectiveness. Calculations, assumptions, and references supporting these evaluations will be documented in the FS.

Alternatives that provide no clear advantage in cost, implementability, or effectiveness may be eliminated from consideration. However, alternatives that offer significant advantages by one criterion should be retained for Detailed Analysis even if they are inferior by another criteria.

Once the set of alternatives are identified for the Detailed Analysis, each alternative should be reviewed to identify any Federal location-specific or action-specific ARARs that would apply to its implementation or operation. Descriptions of the alternatives and such ARARs should be transmitted to state regulatory agencies for identification of any state ARARs that may be more stringent.

The alternatives should also be reviewed to determine whether any Treatability Investigation efforts are needed either to provide the cost for an alternative, or information for predicting an alternative's effectiveness and environmental impacts.

Figure 3-4 lists the elements of the Screening of Alternatives step.

### **3.5.5 Treatability Investigation**

Considered to be a part of the RI, the Treatability Investigation is an optional step that depends on information requirements for subsequent Detailed Analysis of Alternatives. Treatability Investigation may include:

- Literature surveys for candidate control technologies.
- Bench and pilot scale treatability testing.
- Collection of additional field data.

As is the case with any field data collection, a SAP and a site worker HSP should be prepared prior to collection of additional field data, and may be appropriate for treatability testing. If any new off-post sampling efforts are required, verbal approval must be obtained in advance from HQDA through higher headquarters in accordance with AR 200-1, Section 11-10 and follow up in writing.

Figure 3-4 lists potential elements of the Treatability Investigation step.

### **3.5.6 Detailed Analysis of Alternatives and the Feasibility Study**

Once a limited number of viable alternatives has been developed and ARARs have been identified, the alternatives are evaluated against nine criteria specified in the NCP and listed in Table 3-2. Note that state and community acceptance may not be evaluated fully until the Proposed Plan is published and public review is completed during the selection of remedy step. The analysis of short-term effectiveness will include, as appropriate, an evaluation of any impacts on the installation's mission.

Analyses of ARARs, long-term effectiveness and permanence, and the environmental impact component of short-term effectiveness will provide the evaluations required for compliance with the NEPA. The cover page of each FS and combined RI/FS shall include the legend: "This document is intended to satisfy the purposes of the National Environmental Policy Act of 1969."

Identification of preferred alternative includes consideration of Presumptive Remedies and Natural Attenuation.

Presumptive Remedies are preferred cleanup technologies for common categories of sites having similar characteristics, and are based on past experiences in site remediation, as well as the USEPA's scientific and engineering evaluation of performance data on technology implementation. The remedy selection process should not be limited to an evaluation of Presumptive Remedies, but include the consideration of innovative technologies demonstrated to be as effective or superior to the Presumptive Remedies. See Section 3.6.5 for more information on Presumptive Remedies.

Natural Attenuation refers to naturally-occurring processes in soil and groundwater environments that act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in those media. These in situ processes include biodegradation, dispersion, dilution, adsorption, volatilization, and chemical or biological stabilization or destruction of contaminants. If Natural Attenuation is selected, the proponent must scientifically demonstrate that attenuation of site contaminants is occurring at rates sufficient to be protective of human health and the environment. See Section 3.6.6 for more information on Natural Attenuation.

The detailed analysis of alternatives is presented in a FS or could be combined with the results of the RI in a combined RI/FS. The recommended format for a FS is presented in Table 3-3.

Figure 3-4 lists the elements of the Detailed Analysis of Alternatives and Figure 3-9 shows how key elements are related.

**Table 3-2. Criteria For Evaluating And Comparing Alternatives Grouped  
By Their Roles In Selecting The Remedy**

**Threshold Criteria** - must be satisfied unless waived in accordance with 40 CFR 300.430 (f)(1)(ii)(C)

- Overall protection of human health and the environment combines:
  - long-term effectiveness and permanence (below);
  - short-term effectiveness (below);
  - compliance with ARARs (below).
- Compliance with ARARs categorized as:
  - containment specific;
  - location specific;
  - action specific;
  - other criteria advisories and guidance.

**Primary Balancing Criteria** - form basis for comparison

- Long-term effectiveness and permanence based on:
  - residual risk from untreated waste or treatment residuals remaining after remediation;
  - adequacy and reliability including reliance on land-disposal, potential need to replace, and risks posed should components need replacement.
- Reduction of toxicity, mobility, or volume through treatment considering:
  - processes used;
  - amount of hazardous substances, pollutants or contaminants to be destroyed, treated, or recycled;
  - degrees of reduction in toxicity, in mobility, and in volume;
  - irreversibility of treatment;
  - type, quantity, persistence, toxicity, mobility, and propensity to bioaccumulate of remaining hazardous substances;
  - reduction in principal threats at the site.
- Short-term effectiveness including:
  - community impacts during implementation;
  - impacts on workers and the effectiveness and reliability of protective measures;
  - environmental impacts during implementation and the effectiveness and reliability of mitigating measures;
  - time until protection is achieved.
- Implementability including:
  - technical feasibility including technical difficulties and unknowns in construction and operation, reliability, ease of replacement or augmentation, and ability to monitor effectiveness;
  - administrative feasibility including need to coordinate with other agencies and ability and time required for permits and approvals;
  - availability of services, materials, equipment, and specialists.
- Cost including:
  - capital, both direct and indirect;
  - annual operation and maintenance;
  - net present value.

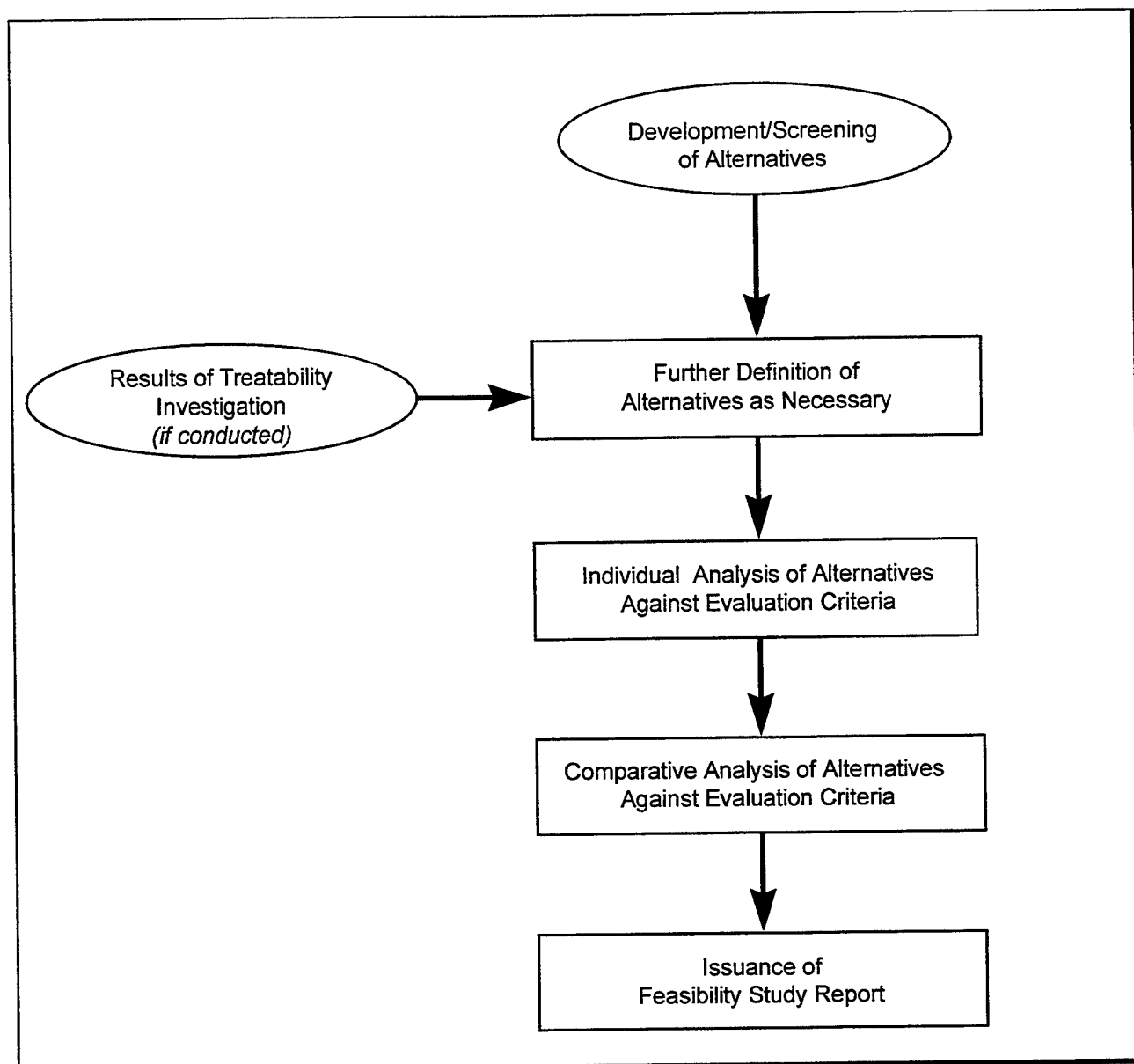
**Modifying Criteria** - considered in remedy selection

- State acceptance including:
  - preferences for and concerns with alternatives;
  - comments on ARARs and proposed use of waivers.
- Community Acceptance

**Table 3-3. Recommended Feasibility Study Report Format**

Executive Summary	
1.	Introduction
1.1	Purpose and Organization of Report
1.2	Background Information (Summarized from RI Report)
1.2.1	Site Description
1.2.2	Site History
1.2.3	Nature and Extent of Contamination
1.2.4	Contaminant Fate and Transport
1.2.5	Baseline Risk Assessment
2.	Identification and Screening of Technologies
2.1	Introduction
2.2	Remedial Action Objectives - Presents the development of remedial action objectives for each medium of interest (i.e., groundwater, soil, surface water, air, etc.). For each medium the following should be discussed:
-	Contaminants of interest
-	Allowable exposure based on risk assessment (including ARARs)
-	Development of remediation goals
2.3	General Response Actions - For each medium of interest, describes the estimation of areas or volumes to which treatment, containment, or exposure technologies may be applied.
2.4	Identification and Screening of Technology Types and Process Options. For each medium of interest describe:
2.4.1	Identification and Screening of Technologies
2.4.2	Evaluation of Technologies and Selection of Representative Technologies
3.	Development of Alternatives
3.1	Describes rationale for combination of technologies/media into alternatives. Note: This discussion may be by medium or for the site as a whole.
3.2	Screening of Alternatives (if conducted)
3.2.1	Introduction
3.2.2	Alternative 1
3.2.2.1	Description
3.2.2.2	Evaluation
3.2.3	Alternative 2
3.2.3.1	Description
3.2.3.2	Evaluation
3.2.4	Alternative 3 (etc.)
4.	Detailed Analysis of Alternatives
4.1	Introduction
4.2	Individual Analysis of Alternatives
4.2.1	Alternative 1
4.2.1.1	Description
4.2.1.2	Assessment
4.2.2	Alternative 2
4.2.2.1	Description
4.2.2.2	Assessment
4.2.3	Alternative 3 (etc.)
4.3	Comparative Analysis
Bibliography	
Appendices	

Source: USEPA, 1988



**Figure 3-9. Flow Diagram for Detailed Analysis of Alternatives**



### 3.5.7 Selection of Remedy, the Proposed Plan, and Decision Documents

To begin the Selection of Remedy step, the Army will identify a preferred alternative from among those evaluated in the FS. Identification of the preferred alternative will be based first on each alternative's ability to satisfy the threshold criteria identified in Table 3-2 and the elements listed in Figure 3-4, and then on trade-offs among alternatives considering the primary balancing criteria. The RPM/BEC will coordinate with the Installation Commander, MACOM, USAEC, USACE Division/District, and others as directed in identifying this alternative. For sites proposed for or listed on the NPL, the RPM/BEC will also coordinate with HQDA ODEP and the DASA(ESOH). The installation will request from HQDA, ODEP a review of any preferred alternatives that involve off-post response actions. See Sections 2.6.1, 4.1.2, and 5.3 for a more detailed discussion of the document review and approval procedures.

The preferred alternative is presented to the public in a Proposed Plan that also briefly describes the other alternatives that were considered and summarizes the information relied upon to select the preferred alternative. If waivers to ARARs (see 40 CFR 300.430 (f)(1)(ii)(C)) are required, an explanation of the basis for waiver should be included. Any formal state comments on ARARs or alternative selection should also be summarized in the Proposed Plan.

The FS and Proposed Plan are sent to regulatory agencies for review and comment and are made available for public review and comment in accordance with minimum requirements and any additional measures specified in the CRP.

Following public and regulatory agency review, the installation will summarize significant comments received and will prepare responses. The proposed Responsiveness Summary will be distributed to each Army party involved in the initial identification of the preferred alternative. The installation will coordinate the Army's reaction to public and agency comments, revise the Responsiveness Summary accordingly, and adopt or amend the preferred alternative to arrive at the selected remedy.

The selection will be documented in a DD for non-NPL sites, operable units, or removals for NPL sites, or in a ROD for final remedial actions at NPL sites. Appendix H provides a Decision Document Outline. If design or construction is to be phased due to funding limitations or complexity of the remedy, the operable units should be identified. Any activity which could potentially involve use of ER, A or BCA funds must reference potential Anti-Deficiency Act (31 USC 1341) limitations on performance and state that in the event of a shortage of funds, a prioritization process will occur. DDs and RODs will be signed by the appropriate official in accordance with Section 2.6.1.1. RODs and any DDs with a non-Army signature (i.e., USEPA, state) will be approved and signed by DASA(ESOH) prior to transmittal to USEPA or state for concurrence. A notice of the decision and of the availability of the document should be publicized in accordance with public participation guidance.

Section 4.1.2 and Section 5.3 of this Guidance Manual provide updated procedures related to processing project documentation. These sections establish procedures for installations to manage and expedite projects and suggestions, to concurrently review project decision documents (e.g., RODs and other DDs). These procedures include time limitations for document review and approval.

See Guidance on Preparing Superfund Decision Documents (USEPA, 1989) for additional information on preparation of Proposed Plans, DDs, and RODs.

### **3.5.8 Generic Time Line for RI/FS**

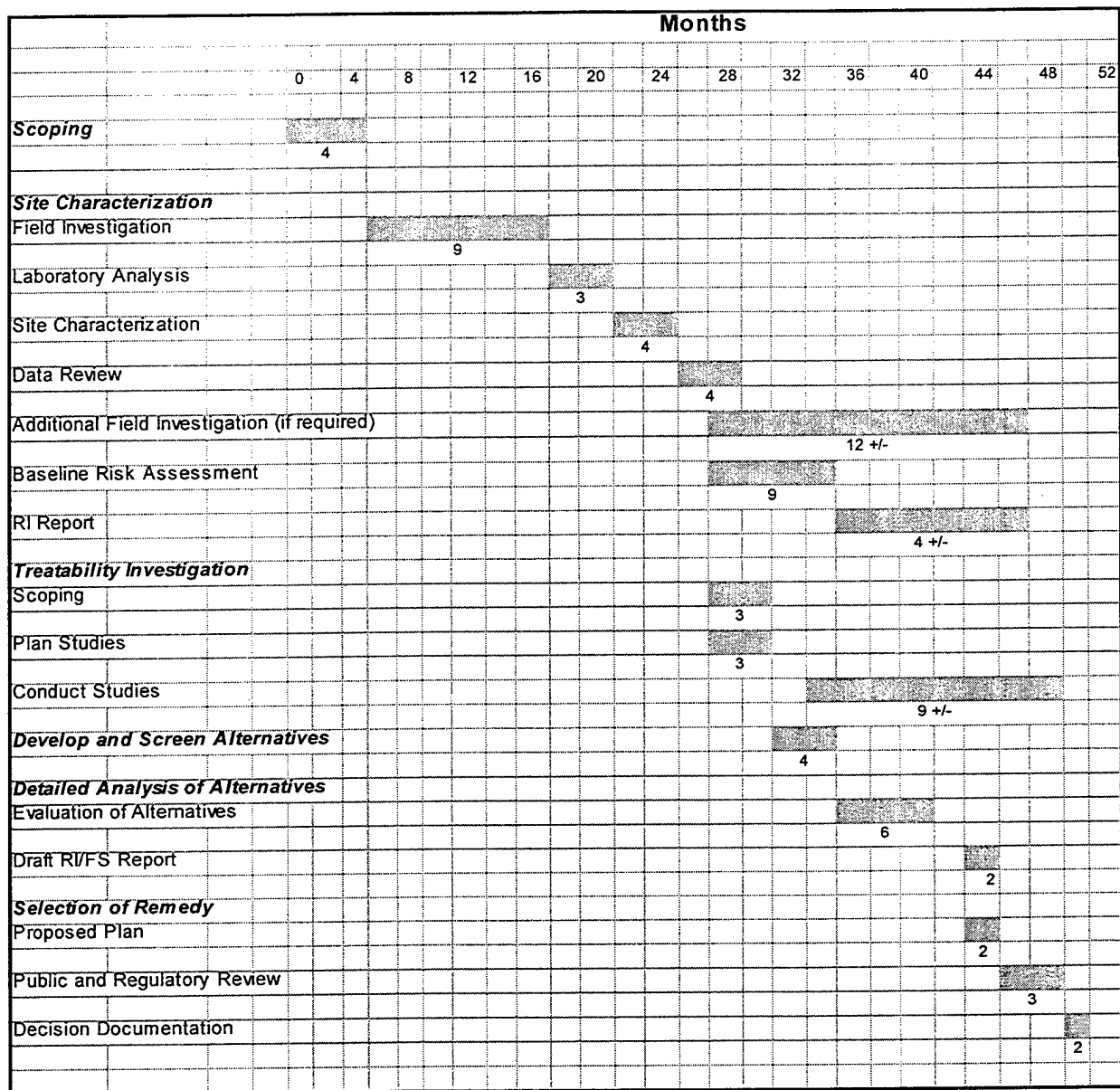
The actual time to conduct an RI/FS for a particular site will depend on a variety of factors. Nominal times in months and a generic sequence of activities for conducting an RI/FS are illustrated in Figure 3-10.

When establishing schedules in an IAG or FFA, it is important to maintain flexibility. The Executing Agency must be involved in the schedule development with respect to establishing realistic contract award response times.

In addition, specific (calendar dates) start and end dates for the various phases should be avoided. Milestones should reflect "Start date = 30 days following completion of Event X" or "End date = 180 days following Start date." In this manner, a schedule delay early in the program will not result in an unnecessary compacting of the subsequent step as would occur in the case of using specific calendar dates.

For BRAC installations, another major consideration is the compliance with the Community Environmental Response Facilitation Act (CERFA). Section 120(h) of CERCLA as amended by CERFA, governs the identification of uncontaminated properties and covenant requirements for deed transfers of contaminated parcels. The USEPA, for NPL facilities, and the appropriate state official, for non-NPL facilities, are authorized to concur with uncontaminated property determinations (CERCLA Section 120(h)(4)). Also, CERFA requires that the DoD component to notify states of leases that will be in effect after the scheduled closure date (CERCLA Section 120(h)(3)). For BRAC 88 and 91 bases, identification of uncontaminated property and CERFA compliance has already occurred. BRAC 93 and 95 bases must complete identification and concurrence no later than 18 months after the approval date [CERCLA Section 120(h)(4)(iii)]. Section 2910 of the National Defense Authorization Act of Fiscal Year 1994 (NDAA 94) has added the further requirement that CERFA identifications and concurrence be completed within 9 months of the submittal of the Local Redevelopment Authority (LRA) approved redevelopment plan.

Figure 3-10. Generic Time Line for RI/FS



### 3.5.9 Operable Units

The regulatory definition of operable units is included in the NCP and promulgated in 40 CFR, Part 300.5. The definition is promulgated as follows:

*"... a discrete action that comprises an incremental step toward comprehensively addressing site problems. This discrete portion of a remedial response manages migration, or eliminates or mitigates a release, threat of a release, or pathway of exposure. The cleanup of a site can be divided into a number of operable units, depending on the complexity of the problems associated with the site. Operable units may address geographical portions of a site, specific site problems, or initial phases of an action, or may consist of any set of actions performed over time or any actions that are concurrent but located in different parts of a site."*

Whether operable units (OUs) are implemented before or after selection of the final RA, they should be consistent with the final action and not preclude its implementation. OUs are subject to requirements for decision documentation, Administrative Records, information repositories, and public participation as these requirements apply to remedial actions.

Parts of remedial actions (i.e., operable units) may be implemented separately:

- To quickly achieve significant reductions in risk while other parts of the RA are being evaluated, selected, or designed.
- To provide a construction management tool for implementing large, complex, or multi-year RA.
- To expedite the completion of total site cleanup.

### 3.5.10 Recommendations for Improving the RI/FS Process

Several principles (or recommendations) allow the RI/FS to achieve two major objectives:

- Facilitate a detailed and thorough evaluation.
- Enhance the development of practical and achievable steps to improve the RI/FS process.

These principles (or recommendations) include:

- Optimizing the internal/external document review process by minimizing consecutive and repetitive reviews, eliminate unnecessary reviews, and to identify where the review focus can be redirected to add value to the project goals and objectives. This can result in significant potential cost and schedule savings.
- Thoroughly scope out the initial site evaluation and development of the data collection plan since cost savings for site characterization and the feasibility study can be realized, in addition to, schedule and performance improvement. The initial site evaluation should

include development of preliminary risk and ARARs assessments, identification of remedial action objectives and likely technologies, assessment of streamlining options, and identification of treatability studies.

- Those projects involving Baseline Risk Assessments or other health questions, it is critical to bring USACHPPM into the project early, in order to ensure that the data collection effort will support any conclusions that will be required by the Surgeon General community.
- Ensure that installation and USACE district Project Managers manage/supervise only as many sites that can be effectively handled without affecting cost and schedule.
- Employ contractors that have well-defined roles and responsibilities with little overlap in effort.
- Foster early and consistent regulatory agency involvement in order to build consensus for the RI process.
- For BRAC installations, the goal is to expedite environmental cleanup to facilitate early reuse of closing installations. Some suggestions include:
  - Concurrent execution of the RI and the FS portions of the investigation.
  - Use of field screening procedures to expedite and facilitate confirmatory laboratory analysis.
  - Partnering (with other agencies or contractors) to optimize the document review process.
  - Use of presumptive remedies.

### **3.6 CLEANUP PHASE**

Following completion of the RI/FS, the results of the detailed analyses, when combined with the risk management judgments, become the rationale for selecting a preferred cleanup alternative for cleanup. The remedy selection process involves the selection of the preferred alternative, the issuance of a proposed plan, a public comment period for the preferred alternative, and, finally the selection of the alternative documented in the ROD/DD.

#### **3.6.1 Remedial Design (RD)**

The RD phase is the engineering phase. The purpose of this phase is to develop a detailed set of plans and specifications for conducting the selected remedial action based on the ROD/DD, cleanup levels, and site characteristics. The process begins with the preparation of a detailed Work Plan. This phase is intended to convert the conceptual design for the selected remedy into a final design that is biddable and implementable. If the selected remedy was divided into operable units, the design may also be divided at the discretion of the installation. The remedial design may proceed to the 35% review prior to finalization of the ROD or DD.

If the remedy selected is a Presumptive Remedy, the scope of the RD phase is potentially minimized because more of this information may have been already collected during RI. Similarly, for the Natural Attenuation alternative, data collected during the site characterization will help in developing a Long-Term Monitoring plan and data collection during the RD phase is minimized.

Whether an innovative technology or Presumptive Remedy is selected, the final design package will typically include final design plans and specifications (which include as-built drawings and a list of equipment); a construction cost estimate; draft Operation, Maintenance and Monitoring Plan; and a final Quality Assurance Program Plan (QAPP).

As appropriate, specifications may include requirements that the remedial action contractor develop and document compliance with:

- A Site Security Plan.
- A RA Sampling and Analysis Plan.
- A Site HSP.
- Fugitive Dust and Water Runoff Control Plan including ambient conditions monitoring during construction.
- Plans for mitigating other environmental impacts.
- Site Worker and Visitor Logs.

If, during the RD step, new information comes to light that would substantially alter the scope, cost, implementability, or effectiveness of the remedial action, the previous Selection of Remedy step may have to be repeated including public participation requirements. Refer to the NCP and seek guidance from the MACOM, USAEC, or ODEP.

If the CRP prepared during the RI/FS phase is no longer appropriate for RD or RA steps, it should be revised early in the RD step.

Permits, approvals, and site access agreements will generally be obtained during RD. Cooperation between the installation environmental, legal, engineering, or public affairs staff is needed to secure these documents.

After the completion of the final engineering design, a fact sheet must be issued to notify the media and the public and, as appropriate, a public briefing conducted.

Figure 3-4 lists elements of the Remedial Design step.

### 3.6.2 Remedial Action (RA)

Following completion and approval of the Remedial Design, the Remedial Action phase is implemented, otherwise known as the construction phase. This phase involves implementation of the plans and specifications prepared during the RD phase. During this process remedial activities including treatment, removal, and all other necessary tasks are undertaken. The RA starts with the solicitation and award of a contract, continues through the final inspection and certification of project construction activities and culminates with the acceptance of the final project. The RA phase may be greatly reduced in scope if Natural Attenuation is selected as a remedial alternative. In this case, the RA may be restricted to the preparation and implementation of a long-term monitoring plan.

The primary responsibility for proper RA implementation rests with the contracting officer (KO), the contracting officer's representative (COR), and the installation. The relationship of the KO, COR and installation are described in detail in Chapter 7. The KO (or his/her assigned designee, the COR or RPM/BEC) will supervise the RA including operations inspections, evaluation of progress reports, adjustment for contingencies and claims, and approvals of actions performed.

Figure 3-4 lists elements of the RA step.

Additional guidance for implementing RD/RAs may be found in Guidance on Expediting Remedial Design and Remedial Action (USEPA, 1990).

### 3.6.3 Post-Project Activities

Many remedial technologies will require operation and maintenance of electro-mechanical equipment after the remedial action is installed. Also, structures and earthworks may require maintenance. All sites that have hazardous substances remaining after the remedial action is installed will require periodic monitoring. Appropriate plans for these post-project activities will have been identified in the FS and ROD/DD, detailed during RD and implemented as appropriate. An operations and maintenance manual should be prepared for long-term remedial equipment operation and/or for monitoring.

In accordance with CERCLA Section 121(c), if hazardous substances, pollutants, or contaminants remain at a site after the RA step, the Installation Commander, with technical assistance from USAEC and USACHPPM, will review monitoring records to ensure that human health and the environment are being protected. The compliance review will be made every five years, or in accordance with the ROD/DD, beginning with the initiation of the Remedial Action step until the remedy is no longer needed.

Figure 3-4 lists elements of Post-Project Activities.

### 3.6.4 Removal Actions

A response action at a site involves either a short-term removal action or a long-term remedial response. Removal actions generally involve cleanup of a release or other actions (e.g., Institutional Controls (see Section 3.6.8)) that are taken in response to emergency conditions and occur on a short term basis. Whereas, a remedial action is a long-term action that stops or substantially reduces a release or threatened release of hazardous substances that is serious but does not pose an immediate threat to public health or the environment.

Under Section 104(e) of CERCLA, an initial response (removal) cannot take more than 12 months or cost more than two million dollars. Although the Army is not legally bound to this requirement, it does acknowledge the requirements as general policy. However, there is a waiver available to allow for a continued response if it is appropriate and consistent with future remedial actions. There are three categories of removal actions: emergency, time-critical, and non-time critical. These are listed in the order of the severity of the situation.

Removals may be implemented at any time during the remedial action process. Most removals will be implemented within a short period following discovery of a site. However, some imminent threats may not be revealed until construction during a remedial action (e.g, finding buried ordnance or drums containing hazardous material). Other removals may be justifiable during the RI/FS phase.

To qualify as a removal, remedies must:

- Be implemented in response to an imminent threat to human health or the environment.
- Be effective in controlling the source or potential source of contamination.
- Substantially reduce the possibility of human exposure to hazardous substances.
- For BRAC, accelerate the schedule to make the property available for transfer.

Removals implemented just for source control or for limiting exposure should be compatible with any remedial action that may be selected. Removals implemented in response to an imminent threat need not be compatible with future remedial actions, need not be shown to be cost-effective, and need not achieve ARARs if the urgency of the situation precludes achieving these goals. However, if the situation allows, these goals should be considered prior to implementation of a removal. Although this Guidance Manual allows considerable flexibility in determining how imminent a threat may be to justify a removal (see Section 1.6.2), the installation should consider taking action as an operable unit duly identified during the Scoping, Site Characterization, or Development of Alternatives steps of an RI/FS.



Decisions to implement removals (or any part thereof) off-post should first receive verbal approval from HQDA through the MACOM. Verbal requests must be followed up in writing. All decisions to implement removals under CERCLA authority must be explained in a DD. A DD may follow the decision to implement, or even the removal action itself, depending on the urgency of the situation.

A removal may or may not be the final action for a site. This depends on whether any hazardous substances, pollutants, or contaminants remain after the removal. Removals may include post-action sample collection and analysis to determine whether contamination remains. If it is unclear whether contaminants remain or whether they pose a sufficient threat to warrant continued action, an RI/FS may need to be initiated to address those uncertainties.

### 3.6.5 Presumptive Remedies

The Presumptive Remedies initiative was identified as one of the Administrative Improvements to Superfund in June of 1993 and is part of a larger program set forth by the USEPA, known as the Superfund Accelerated Cleanup Model (SACM). SACM incorporates the experience gained from past Superfund actions into an integrated approach to site cleanup aimed at getting response action decisions made and implemented more quickly.

Presumptive Remedies are preferred cleanup technologies for common categories of sites having similar characteristics, and are based on past experiences in site remediation, as well as the USEPA's scientific and engineering evaluation of performance data on technology implementation. Presumptive Remedies are expected to ensure consistency in remedy selection as well as the reduction in cost and time to clean up similar types of sites. The USEPA has issued Presumptive Remedy Guidance documents for the following: municipal landfills; sites with volatile organic compounds in soil; wood treaters; and affected ground water. Table 3-4 highlights those Presumptive Remedies which may pertain to waste sites identified at Army installations. The remedy selection process for a hazardous waste site should not be limited to an evaluation of Presumptive Remedies, but include the consideration of innovative technologies demonstrated to be as effective or superior to the Presumptive Remedies.

**Table 3-4. Selective Presumptive Remedies  
(Preferred Technologies) for Military Installations**

Site Type	Presumptive Remedy(ies)
Volatile Organic Compounds in Soils	Soil Vapor Extraction, Thermal Desorption, Incineration
Municipal Landfills (The municipal landfill presumptive remedy should also be applied to all appropriate military landfills.)	Containment (could include capping, leachate collection and treatment, landfill gas collection and treatment, and institutional controls)
Contaminated Ground Water	Pump and Treat

Note: The majority of military landfills contain primarily non-hazardous wastes similar to those found in municipal landfills. However, in some instances military-specific hazardous wastes, as well as various industrial type wastes are predominant constituents of military landfills. RPMs/BECs should seek guidance from MACOM or USAEC to determine whether containment is the appropriate remedy for these forms of wastes. Similarly, the USEPA published the directive entitled Application of the CERCLA Municipal Landfill Presumptive Remedy to Military Landfills (USEPA, 1996), which provides guidance on applying the containment presumptive remedy to military landfills.

Presumptive Remedies must be selected in accordance with Section 121(d) of CERCLA, which specifies that selected remedial actions comply with Federal and state ARARs.

Presumptive Remedy Guidance documents were developed for CERCLA sites, typically to be evaluated during the FS phase. However, they should also be used at RCRA Corrective Action sites to focus RCRA Facility Investigations, simplify evaluation of remedial alternatives in the Corrective Measures Study, and influence remedy selection in the Statement of Basis.

For additional information see:

- Presumptive Response Strategy and Ex-Situ Treatment Technologies for Contaminated Groundwater at CERCLA Sites (USEPA, 1996).
- Presumptive Remedies: Policy and Procedures (USEPA, 1993).
- Application of the CERCLA Municipal Landfill Presumptive Remedy to Military Landfills (USEPA, 1996).
- Presumptive Remedy for CERCLA Municipal Landfill Sites (USEPA, 1993).
- Presumptive Remedies: Site Characterization and Technology Selection for CERCLA Sites with Volatile Organic Compounds in Soils (USEPA, 1993).
- Presumptive Remedies for Soils Sediments, and Sludges at Wood Treaters (USEPA, 1995).

### **3.6.6 Natural Attenuation**

In recent years, remediation by Natural Attenuation has become increasingly accepted as a remedial alternative for groundwater and soil contamination. The term “natural attenuation”, as defined by USEPA, refers to naturally-occurring processes in soil and groundwater environments that act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in those media. These in-situ processes include biodegradation, dispersion, dilution, adsorption, volatilization, and chemical or biological stabilization or destruction of contaminants. Natural Attenuation also is referred to by several other names, such as intrinsic remediation, intrinsic bioremediation, natural restoration, natural assimilation, or passive bioremediation.

In the context of contaminated site remediation, use of the term “monitored natural attenuation” is more frequently used to indicate that the natural processes have been incorporated into the site remedy and are expected to reach specified cleanup levels or other objectives within a reasonable time frame. Natural Attenuation processes typically occur at all sites, but to varying degrees of effectiveness, depending on the types of contaminants present and the physical, chemical and biological characteristics of the soil and groundwater.

Some key highlights of Natural Attenuation include the following:

- Monitored attenuation is recognized by the USEPA as a viable method of remediation for soil and groundwater; however, it should not be considered a default option or a “presumptive remedy.”
- Natural Attenuation is different from “no action” in that “no action” sites pose virtually no risk, allowing regulatory agencies to conclude that no (further) cleanup activities will be necessary. Sites, where monitored Natural Attenuation is being used, are doing so because there is a risk at the site, such as groundwater contaminant concentrations above drinking water standards. Therefore, monitored attenuation is not a “walk away” option because adequate site characterization, monitoring, and analysis must be conducted to determine its viability as a remedy.

In order to determine acceptability of Natural Attenuation as a remedy, site-specific line of evidence must be provided. This includes decline of contaminant concentrations over time and a retreating or stable plume, hydrogeologic or chemical data that can indirectly demonstrate the type(s) of natural attenuation processes active at the site and the rates at which those processes are reducing contamination levels. Also included are the potential inclusion of results of laboratory or field studies to simulate aquifer conditions and to demonstrate that native bacteria can biodegrade contaminants of concern under controlled conditions.

Potential advantages of Natural Attenuation include:

- Potential to lower overall remediation costs.
- Less generation of remediation wastes.
- Fewer and less-intrusive surface facilities.

Potential disadvantages of Natural Attenuation include:

- Significantly longer cleanup times than active remediation.
- Assumed responsibility for long-term monitoring and associated costs.
- More complex and costly site characterization.
- Potential for continued contaminant migration if Natural Attenuation does not perform as expected.

Use of monitored Natural Attenuation should be limited to sites where it will not pose unacceptable risks to human or environmental receptors, and where solid evidence exists that the required cleanup objectives will be achieved in a reasonable time frame. Careful use of this cleanup approach in the right conditions can achieve the desired outcome (e.g., restoration of groundwater to a beneficial use) and save scarce resources for other contamination problems. Natural Attenuation will not be acceptable to the USEPA or state if there is a real threat that contaminants will reach receptors.

Although Natural Attenuation may take longer to achieve than other forms of remediation, remediation time frames for Natural Attenuation should be carefully estimated and compared across the board with all remedy alternatives undergoing analysis. This analysis will highlight any other concerns that may be associated with the selection of Natural Attenuation as the preferred remedy, such as size and complexity of the site contamination problem, classification and use of the underlying groundwater, current and future demand for the groundwater, and regional concerns regarding the use of groundwater and impacts from other contamination sources.

### **3.6.7 Monitoring**

Monitoring actions are used to detect whether contaminants exist at a site and to track the concentrations and spread of contamination from the site. Two types of monitoring (interim and long-term monitoring) are distinguished, primarily by when they occur within the IRP and BRAC ERP.

The costs of monitoring can be very high depending on the amount and type of samples taken, the analyses performed, and the length of time during which monitoring is conducted. It is suggested that monitoring be conducted for predetermined fixed intervals of time. At the end of the monitoring interval, a decision should be made whether to continue the monitoring, modify the monitoring, implement another response action, or implement a SC decision.

All IRP/BRAC ERP monitoring programs require a sampling and analysis plan which details the location, frequency, and type of samples to be collected and describes analytical techniques, Quality Assurance/Quality Control (QA/QC) requirements, and reporting protocol. This documentation should be provided to local, state, and USEPA regulatory authorities for review and comment 30 days in advance of implementation. The decision to implement should be the result of consensus among all parties to the extent possible.

#### **3.6.7.1 Interim Monitoring within the RI/FS or REM Phase**

Site characterization or field investigations conducted during an RI/FS may detect the migration of hazardous substances at rates or magnitudes that warrant ongoing surveillance. Data from the RI/FS may indicate variability (over time or space) in chemical concentrations which should be verified or explained. Some sites may require more data collection than is ordinarily afforded in an RI/FS in order to adequately characterize the release for planning and design decisions. Such surveillance, performed within the scope of the RI/FS and prior to implementation of a removal or remedial action, is called Interim Monitoring. Interim Monitoring will only be used during the

RI/FS or as part of a removal. It will not be designated as an activity to identify potential future contamination.

The objective and scope of Interim Monitoring must be specified on a case-by-case basis. Interim Monitoring should neither be conducted at sites for which no migration of hazardous substances has been detected nor at sites where releases are suspected of being stable or migrating so slowly that they will not pose a threat to people or environment prior to implementation of the Remedial Action.

### **3.6.7.2 Long-Term Monitoring**

Long-Term Monitoring may be justified in cases where disposal or spillage of hazardous substances has occurred but detected quantities in the soil or groundwater are too low to present a threat to human health or the environment. Uncertainty about future increases in concentration and spread of contamination may need to be addressed by Long-Term Monitoring. If Natural Attenuation is selected as a remedial alternative, the Long-Term Monitoring will demonstrate if the contaminant concentrations have reached acceptable levels.

Long-Term Monitoring should not be implemented because of engineering or regulatory uncertainty. It is appropriate only as a response to uncertainties regarding contaminant release and migration. A Long-Term Monitoring plan (equivalent to a SAP) or procedure should be developed based on site characterization data, the results of contaminant fate and transport modeling, and the results of the receptor exposure pathways analysis. All available site specific data and information developed during the site characterization, conceptual model development, and if selected Natural Attenuation investigation methodology should be presented in the Long-Term Monitoring plan.

Long-Term Monitoring should be implemented for terms more than two years. At the end of a term, monitoring results should be reviewed and a decision made whether to terminate the effort, modify the monitoring procedure, continue for another term, or proceed with a removal or remedial action. If monitoring is terminated and a SC decision is made, a DD is required.

Long-Term Monitoring will normally be required either after a remedial action has been completed, or where the remedial action has not resulted in the complete removal of all hazardous material contamination. Usually, the monitoring will occur at five year intervals; however, the specific interval will normally be identified in the ROD/DD.

### **3.6.8 Institutional Controls**

Institutional Controls are those actions that an Installation Commander can take to limit access to areas of contamination. Indirectly, the Institutional Controls are protective of human health and some may be protective to the environment. The installation must take actions to ensure that the Institutional Controls remain in effect as long as there is residual contamination. Deed restrictions are used extensively at BRAC sites where it would be very expensive to remediate to unrestricted (i.e., residential) use.

Institutional Controls are inherent in Natural Attenuation, Long-Term Monitoring, and accelerated UXO Responses at BRAC sites.

Some examples of Institutional Controls include:

- Posting signs warning of the danger associated with the contaminated area or range to further discourage unauthorized access to the area.
- Erecting security fences or other measures to control access.
- Use of earthen control structures and vegetation to contain wastes in-place.
- Implementing a long-term monitoring program for contaminated media, as appropriate.
- Restricting incompatible land uses (where the Army can do so).
- Implementing community education and awareness programs.
- Requiring "dig permits" at areas where the Army has control over site activities.
- Exercising of regulatory and police powers by the Army, such as zoning and issuance of administrative orders.
- Conducting source removals or surface sweeps for UXO at BRAC sites.
- Placing deed restrictions which would prohibit activities such as soil excavation and construction of buildings or other structures.
- Restrictions on property transactions, including negative covenants and easements.
- Nonenforceable controls, such as well-use advisories and deed notices.
- Provision of alternative water supplies.
- Regulatory restrictions on construction and use of private wells, such as well construction permits and water quality certifications.
- Temporary evacuation and housing of threatened individuals.

The effectiveness and reliability of institutional controls should be evaluated when determining whether rapid remediation is warranted. If there is adequate certainty that institutional controls will be effective and reliable, there is more flexibility to select a response action that has a longer restoration time frame. It is important that institutional controls be monitored periodically to ensure the effectiveness of the response action. Institutional controls cannot be deemed effective without considering the specific circumstances since they depend on the specific site, the local authorities (if involved), and private parties that may be involved.

### **3.7 SITE CLOSE-OUT PHASE**

The purpose of the IRP and BRAC ERP is to protect public health and the environment from releases of hazardous substances from past disposal and spill sites. If a site does not threaten public health or the environment, it should be closed out. The conditions required to justify SC decisions are site-specific. In general, the decision can be justified on any of the following findings:

- No evidence is collected in a preliminary assessment that indicates use of the site for hazardous waste handling, storage, or disposal.
- A site inspection or site characterization shows there is no possibility of direct contact, fire or explosion, and samples taken at the site show that no hazardous substances are migrating or likely to migrate from the site.
- The conclusion of a public health evaluation or baseline risk assessment states that there is no significant threat to public health or the environment.
- SC is the selected alternative from the Selection of Remedy step.
- Following the successful completion of monitoring, removals, remedial actions, or post project activities.

Key objectives of the SC are to ensure that:

- The SC decision is formally made by MACOM (or the Installation Commander, if that responsibility has been so delegated).
- The SC decision is documented.
- Regulatory authorities and the public are notified of the SC decision.
- Concurrence on the SC decision is received, if necessary, from the USEPA and the state.
- Deletion is conducted, if the site is on the NPL.

#### **3.7.1 Construction Completion**

One aspect of site close-out is site construction completion. This means that physical construction of all cleanup actions are complete at a site, all immediate threats have been addressed, and all long-term threats are under control. Even though long-term cleanup actions may still be operating, the site or facility is often ready to be reused for economic, social or environmental purposes. Typically, construction at a NPL site or facility is considered complete when:

- Physical construction is complete for the entire site or facility as a result of one or several early or long-term actions; or

- A no-action ROD/DD is signed for the final site stating that no remediation is required; or
- A ROD/DD is signed for the final site stating that all necessary remediation was previously completed; or
- A ROD/DD is signed for the final site stating that the only remediation necessary is the implementation of an institutional control.

In certain cases, site construction is considered complete when:

- Construction activities at all sites are complete and a pre-final inspection for the final site has been conducted; and, a Preliminary Site Close-out Report has been sent to the MACOM. (A Preliminary Site Close-out Report is not necessary if a Final Close-out Report is prepared immediately).
- The ROD/DD must include a construction completion certification or a separate Final Site Completion Report signed by the individual who signed the final ROD, e.g., Installation Commander, DASA(ESOH), or ACSIM. The Completion Report must state that the remedial action has met all requirements identified in the ROD/DD.

### **3.7.2 Deleting Parcels From NPL**

The USEPA announced the partial deletion policy in the Federal Register (60 FR 55466) on November 1, 1995. This policy allows the USEPA to delete portions of a NPL site where no further action is appropriate and to consider petitions to delete parcels. In this way, remediated portions of a site may become available sooner for productive use.

The USEPA may delete portions of NPL sites if one of the following deletion criteria are met:

- Responsible parties or other persons have implemented all appropriate response actions required.
- All appropriate Superfund-financed response under CERCLA has been implemented, and no further response action by responsible parties is appropriate.
- The remedial investigation has shown that the release of hazardous substances poses no significant threat to public health, welfare, or the environment, thereby eliminating the need for remedial action.

Sites that are considered for partial deletion are made available for public comment via the publishing of a Notice of Intent to Delete (NOID) in the Federal Register, by the corresponding USEPA Region. A partial deletion may be defined geographically or by specific medium (e.g., ground water), depending on the nature and extent of the release. As with entire sites, deleted portions of sites remain eligible for further remedial actions should future conditions warrant such action.



To date, six NPL sites have had partial deletions, five are privately owned sites and the sixth site is an Army site on Fort Lewis. Partial deletions are only an option where USEPA regions feel they are appropriate; regions may use their discretion in implementation of this policy.

Most installations that are on the NPL are listed due to one or more specific sites which scored above 28.5 in the HRS. As these sites are remediated and deleted as individual parcels, the installation will become eligible for deletion as an NPL site. Although an installation may be deleted from the NPL, there may continue to be sites requiring further restoration activities.

### **3.7.3 Documentation**

The SC decision must be documented. The documentation should clearly identify the site, reference the data, studies, other evidence on which the decision is based, and describe the rationale for the decision. Site close-out decisions are a part of the Administrative Record and notice must also be published for public record, if deemed appropriate.

If the site is on the NPL, deletion procedures must be implemented as specified in the NCP.

### **3.7.4 Ongoing Responsibilities**

Following the SC step, the site is technically removed from the IRP/BRAC ERP. However, the site may be reentered into the IRP/BRAC ERP if future conditions or new information suggests this is necessary.

The installation is cautioned to establish, maintain, and safeguard all information collected during remedial response in site files. Actions regarding the site may occur years after the data has been gathered. It is crucial that records be sufficiently detailed and protected to provide a complete and accurate history of the remedial response in support of any future legal action. Well organized information will aid the installation or MACOM in answering inquiries from Congress or requests from the general public under the Freedom of Information Act.

## **CHAPTER 4: CONCURRENT REQUIREMENTS**

This chapter describes supporting activities required to be carried out concurrently (e.g., coordination with regulatory agencies, creation of mechanisms for public involvement, etc.). Responsibilities for preparing concurrent requirement documentation are discussed in Chapter 5.

### **4.1 SCHEDULES**

CERCLA Section 120 establishes specific time intervals for initiating evaluation and cleanup of sites which the Army must comply with through the IRP and BRAC ERP.

#### **4.1.1 CERCLA/SARA Requirements**

Any installation added to the Federal Agency Hazardous Waste Compliance Docket (see Section 5.5) must be evaluated by a PA, and, if releases or potential releases of hazardous substances are discovered, be rated by the HRS (see Section 3.4.4). The USEPA may request installations to supply information not included in the PA or the Initial Installation Assessment (such as population density near the site) to facilitate HRS scoring. Although such requests for additional information should be coordinated with the MACOM/MS, the installation should immediately inform the USEPA of the request and indicate that efforts are underway to obtain the appropriate information.

The Installation Commander and his/her staff should be aware that CERCLA Section 120 requires compliance with the following schedule requirements for NPL sites:

- An RI/FS shall be initiated within six months of a site's inclusion on the NPL. Initiation of an RI/FS is demonstrated by substantial progress in completing each of the activities listed in Chapter 3.5.1, "RI/FS Scoping."
- An Interagency Agreement (IAG) or Federal Facility Agreement (FFA) shall be entered into by the USEPA and the Army within 180 days after the review of the RI/FS. (Note: DoD policy is to begin negotiations on IAGs or FFAs soon after a site is proposed for the NPL.)
- Substantial continuous physical on-site remedial action shall begin at each site no later than 15 months after completion of the FS report and ROD/DD. This is not a token effort or merely coordination with the Contracting Officer, but actual implementation of equipment or construction activity. A schedule for completion of the remedial action will be established in the IAG. Completion shall be as expeditious as practicable.
- Installations listed on the NPL shall keep a written record of commitments and milestones in IAGs and RODs/DDs. HQDA requires that installation's commitments and milestones provide updates to the USAEC and the MACOM during the quarterly program review.

For BRAC installations, compliance with CERFA must be demonstrated. CERFA establishes requirements for the identification of uncontaminated properties and provides covenant requirements for deed transfers of contaminated parcels.

In most instances, one or a few sites with contamination or hazardous substance releases cause an installation to be placed on the NPL. The less significant sites on installations listed on the NPL, and any sites on non-listed installations, will be cleaned up if they pose a significant threat to human health, welfare, or the environment. The schedule for responding to non-NPL sites should be appropriate to the nature and severity of the threats they pose.

#### **4.1.2 Sequence of Actions Requiring Approval**

Section 2.6 listed the approval authorities for key documents. This section delineates the approval process or sequence of events for the staffing of these documents. This discussion is directly related to the CERCLA and NCP process for sites that are on the NPL; however, all RODs and DDs follow identical procedures. Although this section refers to CERCLA documents, the RCRA Corrective Action equivalent documents require similar approvals.

Any documents or actions that may be controversial to the USEPA Region, state regulatory agency, or the public should be forwarded through the MACOM to USAEC and ODEP prior to being submitted for formal approval.

##### **4.1.2.1 Feasibility Study, Proposed Plan, and Responsiveness Summary**

In accordance with CERCLA Section 120, an RI/FS must be started no later than six months after an installation has been added to the NPL.

Based on an exhaustive review of advanced technologies, the preferred alternative or cleanup approach for a site is presented to the public in the Proposed Plan (PP). The PP provides a summary of alternatives studied in the FS. Draft PPs are reviewed by the serving installation PAO. CERCLA requires the Army to conduct a public meeting/availability session concerning the PP at or near the facility, and a transcript of the meeting be made available to the public with a reasonable opportunity for written and oral comments. Copies of the PP are included at information repositories and/or distributed to mailing lists before the public comment period begins and can be distributed to RABs/TRCs. To facilitate approval of the selected remedy during the ROD, all PPs are provided to the MACOMs/MSCs, USAEC, and USACHPPM for review.

Following the PP public comment period, the Responsiveness Summary is prepared describing all comments and how the comments have been addressed. The Responsiveness Summary, to include a transcript from the public meeting, is incorporated into the ROD. See Guidance for Preparing Superfund Documents (USEPA, 1989) for further details.

#### **4.1.2.2 Record of Decision/Decision Document**

Following receipt of PP public comments and any final comments from the regulators, a remedy is selected and documented in a ROD/DD. The ROD serves as legal certification that the remedy was selected in accordance with the requirements of CERCLA and the NCP.

The ROD, with the Responsiveness Summary, is forwarded through command channels for HQDA review (see Section 2.6.1). After receiving appropriate concurrence, the installation forwards the ROD for approval and signature to the appropriate regulatory authority. Regulators should not sign the ROD prior to all Army command channel concurrences. The ROD is also not to be submitted to HQDA for approval prior to approval of the final FS report.

In accordance with the NCP, after the ROD is signed, the Army shall:

- Publish a notice of the availability of the ROD in a major local newspaper for general circulation (the USEPA will publish the notice in the Federal Register).
- Make the ROD available for public inspection and copying at the information repositories at or near the facility prior to the commencement of any remedial action.

In accordance with CERCLA 120(e)(3), the remedial action must commence within 15 months of signing the ROD.

The DD for sites which are not covered by an IAG/FFA need not be an elaborate document and in most cases will only be two to three pages in length for simple projects. The DD represents the Declaration Section of a ROD. All DDs, including RODs, will be maintained in the installation Administrative Record and the installation's permanent environmental files.

#### **4.1.2.3 ROD/DD Review Procedures**

Installations and MACOMs ensure DDs or RODs that commit the Army to future funding are:

- Eligible for restoration funding.
- On the IRP Obligation Plan or BRAC Work Plan.
- In conformance with priorities for risk reduction.

The Army will not support funding ER, A- or BRAC-ineligible actions. Installations will fund those projects with installation operating funds. Projects not complying with the above may require re-negotiation of agreements with regulators.

Information on projects where the funding is questionable either due to eligibility requirements or due to apparent excessive costs, should be forwarded through the MACOM to USAEC and ODEP for resolution prior to approval actions.

Installations prepare RODs/DDs, staff the RODs/DDs for review and concurrence of the selected action, and obtain the appropriate approvals prior to release of funds for award of a Removal/Interim RD/RA contract. Projects awarded prior to development and approval of

RODs/DDs are subject to contract modification and will be reported to the ACSIM during program reviews.

After an installation has prepared a ROD/DD, and prior to submittal for appropriate approval signature, all documents are staffed through the installation chain-of-command (the RPM/BEC, PAO, and legal offices). Copies of the draft document are sent to the appropriate environmental MACOM representative and review includes legal and public affairs at the MACOM. Draft copies of the ROD/DD are also provided to the appropriate USAEC and USACHPPM representative for review and concurrence with the selected action.

After preparing the ROD/DD, installations must allow sufficient time for staffing at each level in the chain-of-command.

- **Review and Concurrence:** Army policy for staffing RODs/DDs suggest that 60 to 90 days be allowed for technical review and concurrence to the installation staff, MACOM, USAEC, USACHPPM, and the regulators.
- **Approval and Signature:** Army policy for staffing RODs/DDs suggests that 30 to 45 days be allowed for administrative staffing to the Installation Commander, MACOM commander, and the ACSIM for approval and signature.

#### **4.1.2.4 Remedial Design/Remedial Action**

In accordance with CERCLA 120(e)(3), within 15 months after completion of the FS report and ROD/DD, the selected alternative must be designed and substantial continuous on-site activity must be underway.

The contracting process for a RD can be initiated prior to placement of the PP in the repository for public review. However, actual contract award for the RD should not take place until approval of the PP. Also, the remedial design will not proceed beyond the 35% completion stage until the ROD/DD is signed. If an installation wishes to proceed beyond the 35% completion stage of the RD without an approved ROD/DD, a request to proceed with justification for continued RD action must be submitted to USAEC for approval.

Prior to award of a RA contract and commencement of RA operations, a ROD/DD must be prepared, approved, and signed in accordance with Army review and approval procedures for RODs/DDs.

## **4.2 COORDINATION WITH REGULATORY AGENCIES**

CERCLA requires that all response activities at Federal facilities be coordinated with Federal, state, and local authorities in implementing CERCLA and NCP requirements for NPL and non-NPL sites. For all sites, state-defined ARARs and requirements for notification and human participation need to be met.

The Installation Commander, as the responsible official for site actions on the installation, will be kept well informed of all negotiations and agreements with regulatory agencies concerning IRP/BRAC ERP sites. If a problem develops in coordination with regulatory agencies, the Installation Commander or his/her representative should become directly involved in order to prevent or alleviate any possible complications that could lead to adverse impacts to the installation or its mission.

#### **4.2.1 Notification**

CERCLA Section 211 requires DoD to ensure that the USEPA, Natural Resource Trustees, and appropriate state and local authorities receive prompt notice of the following:

- The discovery of releases or threatened releases of hazardous substances at an installation.
- The extent of the threat to public health and the environment.
- Proposals to carry out response actions.
- The initiation and the commencement of each distinct step of any response action.

#### **4.2.2 Participation in Decision Making**

The Army is also required to ensure that the USEPA and appropriate state and local authorities have adequate opportunity to participate in the planning and selection of response actions including, but not limited to, review of all applicable data as it becomes available, development of studies and reports, and review of and comment on response action proposals and activities prior to the initiation of any action.

If a removal is implemented on an emergency basis because of immediate and substantial endangerment to human health and welfare or the environment, and consultation would be impractical, the public participation requirement does not apply. However, reasonable steps to notify and involve interested agencies should be taken. Removals undertaken not on the basis of "immediate and substantial endangerment" are subject to the full range of public participation and documentation requirements described in this guidance.

Notifying the USEPA, Natural Resource Trustees, and appropriate state and local authorities of releases, response action proposals and activities, and participation by these authorities in the planning and selection of response actions can be the foundation of successful response decisions and actions. It would be beneficial for the Army to try to develop a consensus of opinion with the USEPA, appropriate state and local authorities, and the interested public particularly in regard to the selection of a remedial action, since response actions are subject to substantial technical and regulatory uncertainty. A general agreement by all parties concerned as to the action to be taken at a site could be advantageous in the event that unforeseen problems arise; consensus is likely to encourage cooperation, rather than adversarial reactions to problems.

In addition to reviewing and commenting on Army documents and decisions, states have a role in defining ARARs for both NPL and non-NPL sites. CERCLA Section 121(d) requires that, with stated exceptions, Federal facility remedial actions must comply with these ARARs. See Section 4.7 for more discussion concerning ARARs.

#### **4.2.3 NPL Installation IAGs and FFAs**

For installations and sites listed on the NPL, CERCLA Section 120(e)(2) requires that the Army and the USEPA enter into an IAG for the expeditious completion of all necessary remedial actions at a site. Where entire installations are listed, the Army interprets this statutory requirement to apply only to sites that are demonstrated to have caused the problems for which the installation was listed. CERCLA Section 120(e)(4) specifies that the USEPA must concur with the Army's selection of a remedial action for NPL sites. In the event that the USEPA does not concur, differences should be resolved as required by the IAG previously negotiated. A Federal Facility Agreement (FFA) is essentially the same as an IAG and serves the same purpose.

Upon nomination to the NPL, USEPA Regions will request that the installation and state regulatory agency enter into an IAG/FFA. The IAG/FFA addresses the completion of all necessary remedial actions at the installation. The Installation Commander and the DASA(ESOH) will both sign the IAG/FFA for the Army. DoD and USEPA developed model language that forms the basis for negotiations. Deviations to the model language must be approved at DoD, however DoD and the Army strongly encourage that the concept of "flexible" schedules and that RRSE rankings be incorporated into IAGs/FFAs for the IRP. Implementation of DoD's RRSE for sequencing of cleanup activities may cause existing IAGs/FFAs to be re-negotiated. For re-negotiated agreements, the DoD and the Army, again, strongly support incorporation of the concept of flexible schedule.

The installation's servicing legal office has the lead in IAG/FFA negotiations; however, the legal chain of command may designate another lead should the installation/MACOM request assistance. When the IAG/FFA is sent to DASA (ESOH) through the command chain for signature, the ACSIM requires concurrence from the USAEC. The installation should provide USAEC with copies of the draft IAG/FFA for review and concurrence prior to sending the IAG/FFA to DASA (ESOH) for signature.

All signed IAG/FFA information (parties and dates) are reported in the IAP/BCP and DSERTS. A copy of the final IAG/FFA must be furnished to the USAEC.

For the IAG/FFA model language, see Appendix B, of this Guidance Manual.

#### **4.2.4 States Role at Non-NPL Sites**

States may play an even greater role at non-NPL sites. CERCLA Section 120(a)(4) specifies that substantive state laws concerning removal and remedial action, including state laws regarding enforcement, shall apply to removal and remedial actions at facilities owned or operated by the Federal government. This is especially true in those cases, such as a RCRA Corrective Actions requirement, where the state has extensive control. This requirement does not apply if a state law would apply any standard or requirement to a Federal facility that is more stringent than the

standards or requirements applied to facilities in that state that are not owned or operated by the Federal government. In addition, removal or remedial actions conducted entirely on-site for CERCLA actions need only comply with the substantive aspects of state laws and not the administrative aspects such as permitting (specifically exempted under CERCLA Section 121(e)) or administrative reviews. Operating permits will be required (e.g., RCRA Part B Treatment Permit) for cleanups being conducted on-site under RCRA authority.

The Army will normally follow the policies and procedures established in CERCLA and this Guidance Manual for non-NPL sites. If a state has additional policies or procedures requirements beyond those contained in the NCP, the MACOM/MSO should be contacted for guidance prior to taking any action. In most cases, non-NPL sites will be treated in the same manner as NPL sites, except for the following items which are not required for non-NPL sites:

- Schedule requirements beyond the PA/SI.
- USEPA concurrence on remedy selection and establishment of an IAG/FFA for remedial actions.
- ATSDR Health Assessments (described in Section 4.9). Under CERCLA Section 104(i), a non-NPL site could be subject to the Health Assessment process if a “licensed physician or any individual” petitions the Administrator of ATSDR and the Administrator concurs that a Health Assessment is warranted.

#### **4.2.5 The Defense State Memorandum of Agreement (DSMOA)/Cooperative Agreement (CA) Program**

The DSMOA/CA Program was developed to expedite the cleanup of hazardous waste of facilities (both NPL and non-NPL) under the jurisdiction of the Secretary of Defense. Under Section 10 USC 2701(d), the Secretary of Defense may enter into agreements to reimburse a state for services the state provides DoD components in facilitating the restoration effort. The DSMOA specified the conditions under which DoD will reimburse a state for providing services in direct support of DERP or BRAC environmental restoration funded activities. Services that may qualify for reimbursement include:

- Technical review, comments, and recommendations on all documents or data submitted to the state.
- Preparation and administration of the DSMOA and amendments.
- Identification, review, determination, regulation of ARARs.
- Site visits to review Army response actions.
- Support and assistance in conducting public education and public participation requirements.
- Participation in TRCs/RABs.



- Preparation and administration of a CA to implement the DSMOA.
- Independent quality control/quality assurance.
- Determination of legal and technical applicability of agreements, but excluding any costs which may be incurred preparing for litigation against the U.S. Government.
- Additional services that may be set forth in the DSMOA on a state-by-state basis.

By signing a DSMOA, the DoD and state commit to cooperate in the cleanup of specified DoD facilities. The DSMOA establishes the procedural framework by which the state undertakes to provide services to DoD components and the method by which it will claim and receive reimbursement for its costs. Although a signed DSMOA is a prerequisite for reimbursement, it is not a funding instrument. A state may apply for and receive funding only through an approved CA application. Under current DoD policy, a state may receive up to one percent (1%) of DERP expenditures and up to one and one-half percent (1.5%) of BRAC expenditures for environmental restoration activities for all eligible facilities within the state.

The DoD and states negotiate CAs to include all facilities specifically listed in the DSMOA. The DSMOA list of installations should include any for which there is an existing IAG. Also, payments to states for support services agreed to in existing IAGs should be consolidated in the implementing CA. For a CA application, costs must be broken out by service and source of funds, either ER, A or BCA.

The costs associated with implementing a Federal environmental restoration program include:

- Direct Salary Costs - costs of hours worked and other benefits paid to state employees working on behalf of an Army site (e.g., the costs of hours expended by engineers, geologists, environmental scientists, and public information officers).
- Other Direct Costs - costs incurred as a direct result of the work of agency staff on behalf of a site (e.g., the costs of travel, reproducing documents, equipment, laboratory services, contractor services, and any other direct costs related to a specific site).
- Program Support Costs - non-site-specific direct program costs necessary to support the state's ability to implement an environmental restoration program (e.g., the costs of general program management and supervision; participation in conferences related to site cleanup; clerical support; computer support and database management) and development of CAs.
- Agency Indirect Rate - the overhead rate for the state agency approved by the federal cognizant agency. For most states in the DSMOA program, the federal cognizant agency is the USEPA.

DUSD(ES) has designated the Army as the executive agency and the Chief of Engineers, USACE, as execution organization for the DSMOA/CA program.

DoD has developed a six-step process of preparing the CA funding requirements. The six steps set forth below are listed in the order in which they usually occur. A CA covers a two-year period from July 1 of year one through June 30 of year two. The steps in its preparation should begin approximately one year before the desired grant award date. The intent of this process is to build a coherent CA for a specified two-year period on the basis of direct technical efforts mutually agreed upon at the installation level by managers representing the installation and the state.

- Step 1 - the initial step in the process. The designated representative of the state (e.g., the state project manager) contacts the installation representative (e.g., the Installation RPM/BEC) to notify the installation that the state is initiating the development of the two-year CA. (June - July 1998)
- Step 2 - identify the information the installation will be asked to provide to the state to support a mutually agreed-upon two-year plan of activities for the installation. The installation RPM/BEC, using the installation's IAP/BCP or BCP Abstract for cleanup activities and the schedule of the activities to accomplish the plan (in accordance with POM guidance from the MACOM) should provide the state project manager with a detailed schedule of deliverables and activities for the two-year CA period and a narrative summary of activities planned for the four years subsequent to the two-year CA (i.e., years three through six). The Installation RPM/BEC and the state project manager then together identify and agree upon the activities to be accomplished under the two-year CA and those activities expected to occur in years three through six. These products are strictly activity-oriented and are not based on funding levels to accomplish the IAP/BCP. (June - August 1998)
- Step 3 - the state CA administrator, using the schedule developed in Step 2, calculates the costs of accomplishing the CA, including direct salary costs, other direct costs, direct program support costs, and agency indirect rate costs. The costs are derived from management allocation of resources to accomplish those activities identified in the individual installation two-year plan of activities and narrative cleanup plan. (September - October 1998)
- Step 4 - the DoD Regional Environmental Coordinator (REC) may coordinate with MACOM and other Service representatives, to preview the draft CA for all installations in the state, in order to ensure that the installation-level agreements have been represented accurately. The REC may ensure that each service representative has the opportunity to review the statewide cost summary and backup installation costs that have been supplied. This forum is provided to share information, provide clarification, and form an agreement on the reasonableness of the draft CA. (October - November 1998)
- Step 5 - the state completes its CA application and submits the application to HQUSACE for processing and funding. The CA application includes the summary of costs by service and by funding source for each of the two years of the CA and presents an estimate of total costs for years three through six (by service and by fund source). An advantage of this procedure is to provide in advance budget data that show program direction. HQUSACE will transmit all of the Army related CA applications to the DASA(ESOH) for signed concurrence. (January 1999)

- Step 6 - completes the CA process. At this point, several actions must occur. The individual service provides its share of the first year's funding by February 1 (before the July 1 start date of the CA). The HQUSACE program manager prepares a letter that approves the two-year CA and provides funding to the state for the first year. (February - April 1999)

HQUSACE uses cost estimates submitted by the states to prepare a budget for each military component. The budgets are then submitted to each service and the DUSD(ES). Although each military component provides separate funding to the DSMOA program, the states receive funding from a centralized source in the DERP account at HQUSACE. Financial managers at HQUSACE track all funding by military component and installation. Each military component receives semi-annual reports from USACE managers once a new procurement goes into effect. States still have the flexibility to shift DERP/BCA funds as appropriate.

See Working Together to Achieve Cleanup: A Guide to the Cooperative Agreement Process (USACE, 1997) for further details.

### **4.3 PUBLIC PARTICIPATION**

Public participation activities are intended to promote active communication between communities which may be affected by releases of hazardous substances and the agency responsible for response actions. The overall objectives are to:

- Collect information about the community in which the site is located.
- Supply the public with accurate and timely information regarding planned or on-going actions and progress, and to focus and resolve conflict.
- Present citizens with the opportunity to comment on and provide input to technical response decisions.

The Installation Commander should be involved in public participation activities. As the official directly responsible for all IRP/BRAC ERP activities on the installation, he/she can best demonstrate the Army's willingness to listen and to address community concerns. The Commander's involvement can be particularly important in the event that unanticipated developments occur, since he/she has the authority to commit resources (personnel and materials) to ensure that the public is informed.

#### **4.3.1 Army Policy on Public Participation**

It is Army policy to keep the public fully informed of IRP/BRAC ERP activities. Army Public Affairs Officers should work closely with Installation Commanders, concerned installation personnel, other Army elements, USEPA, and state agencies to define specific strategies for handling potential public and media interests at the program onset, and to ensure that appropriate public affairs activities are jointly executed with each step of the IRP/BRAC ERP. An organized approach to community relations at the local level is required to keep community leaders, local

government officials, including appropriate members of Congress, and affected citizens informed and allow them to provide feedback to installation officials. Figure 4-1 shows the relationship of Community Relations activities to CERCLA technical activities.

Corrective actions may take place under a RCRA permit or as an enforcement order under Section 3008 of RCRA. Since authorized states often oversee Corrective Actions, installations must check with their state agency to identify public participation requirements. The USEPA encourages equivalent public participation regardless of being a RCRA or a CERCLA driven project. Installations with RCRA Corrective Actions should review the RCRA Public Participation requirements in the references cited below.

Specific guidance regarding the development and implementation of public participation requirements of CERCLA and the NCP can be found in:

- U.S. Army Restoration Advisory Board and Technical Assistance for Public Participation Guidance (USAEC, 1998).
- Commander's Guide to Public Involvement in the Army's Installation Restoration Program (USATHAMA, 1990).
- RCRA Public Participation Manual (USEPA, 1996).
- Community Relations in Superfund: A Handbook (USEPA, 1992).

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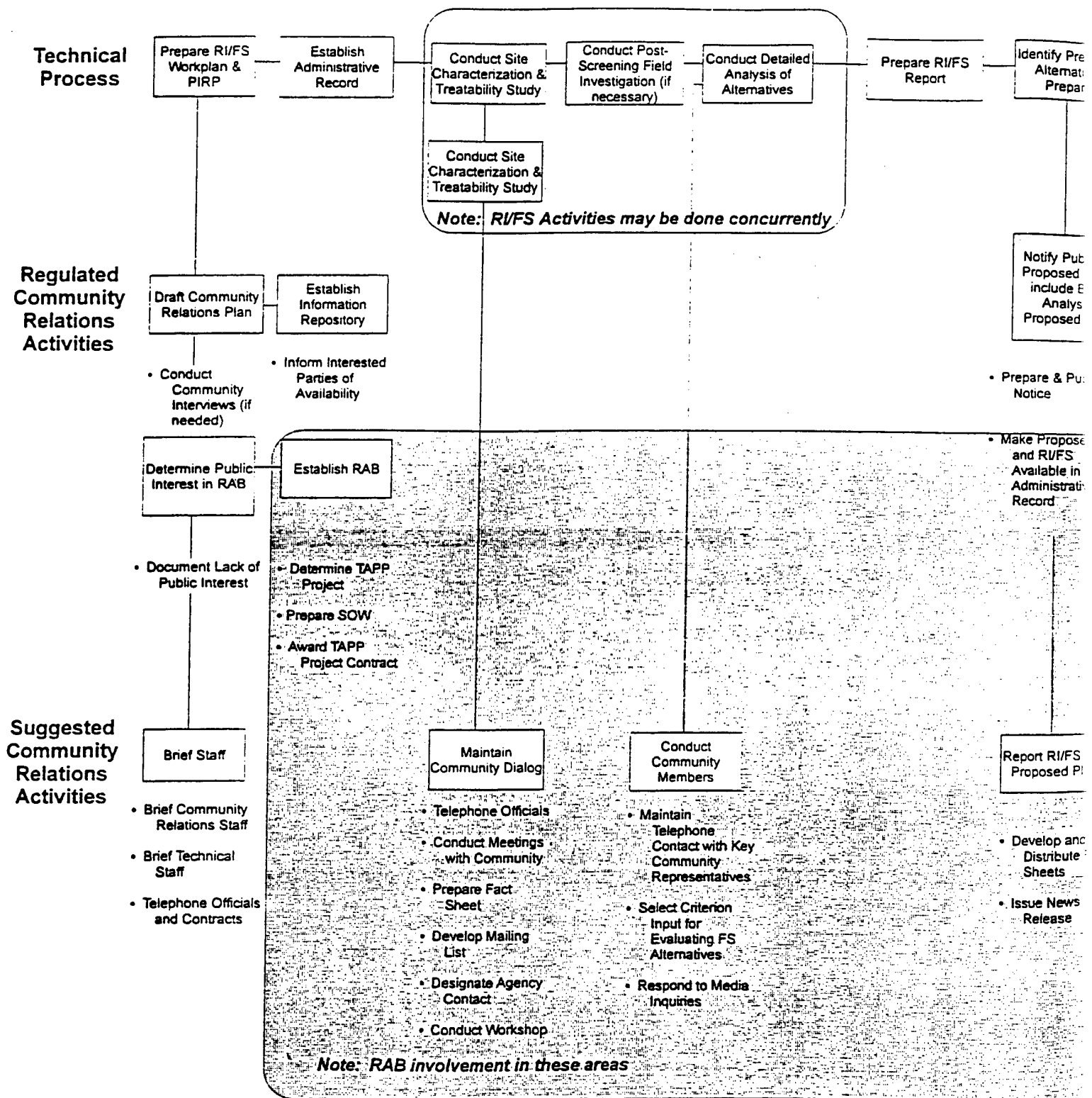
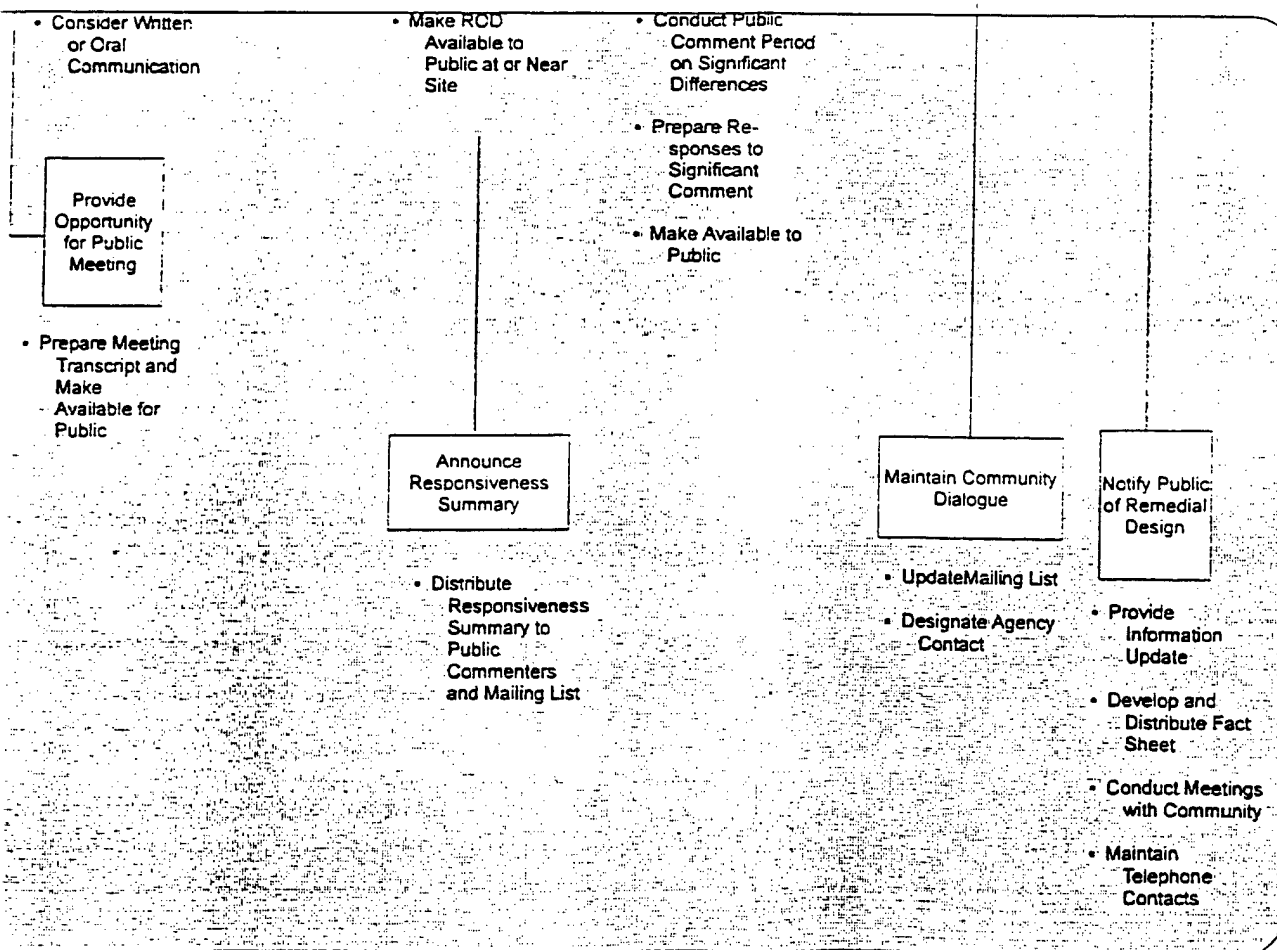
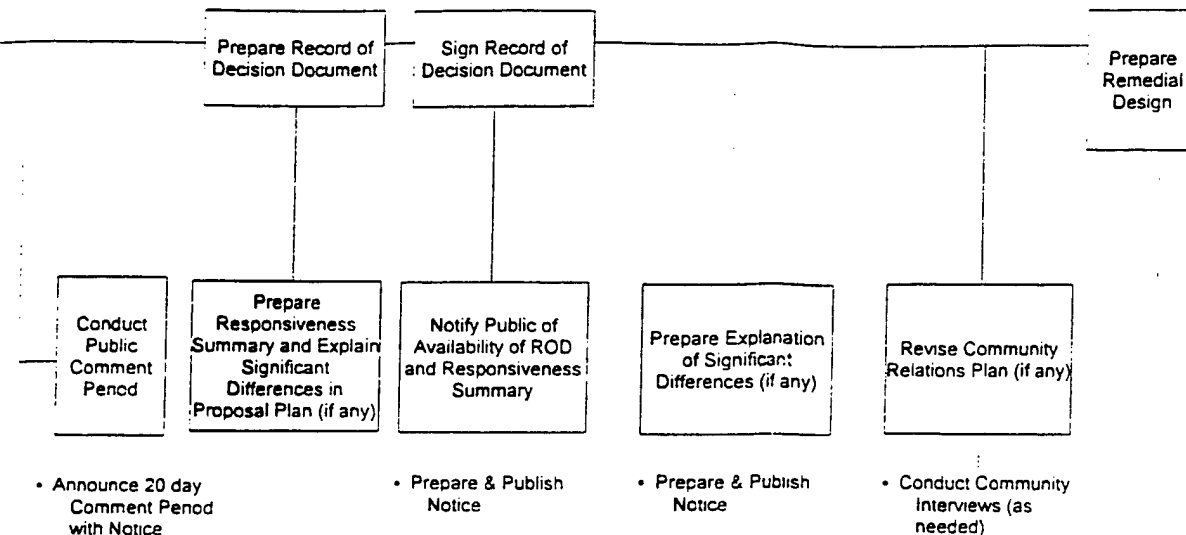


Figure 4-1. Community Relations





# as CERCLA Activities



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### **4.3.2 Public Participation Requirements Relating to the RI/FS**

Public participation activities are initiated by the RI/FS scoping step of the remedial action process. During this step the following activities are undertaken:

- Acquire and review background information regarding the site and factors that could influence public perceptions of the contamination problem (e.g., proximity to residences or schools, location of public water supply and migration potential).
- Identify target audiences, key community leaders (local government officials, including appropriate members of Congress), citizen groups, interested citizens, and news media representatives. Identification of these groups is particularly important if the size of installation's local community is such that it is not possible to interview all interested people.
- Conduct interviews or workshops with local officials, community residents, public interest groups, and other interested or affected parties to solicit their concerns and information needs, and to learn how and when citizens would like to be involved in the response process.
- Prepare a formal Community Relations Plan (CRP) based on the research conducted and community interviews, specifying the public involvement activities that the Army expects to undertake during the response, and include the CRP with the RI/FS Work Plan. Basic elements of the CRP should include:
  - Site background.
  - Environmental history.
  - The community interview program.
  - Community concerns.
  - The planned public involvement program.
  - A list of media and civic/community groups.
- Establish a RAB or TRC. See Section 4.3.3.

The public is afforded the opportunity to review and comment on the Draft FS. Section 117 of CERCLA specifies that the following actions shall be taken in conjunction with the adoption of any plan for remedial action:

- Prepare a brief analysis ("Proposed Plan") of the Draft FS. The analysis should identify the sites or operable units being addressed; summarize the problem that the proposed action is intended to remedy; review the alternatives that were considered; identify the preferred alternative and how it was rated by the evaluation criteria; and explain how the public may participate in the process. The Proposed Plan may be presented as a fact sheet or as a stand-alone document depending on the complexity of the proposed action. For further information see USEPA Guidance for Preparing Superfund Decision Documents; The Proposed Plan, The Record of Decision, Explanation of Significant Differences, and Record of Decision Amendment (USEPA, 1989).
- Prepare and publish in a major local newspaper of general circulation a notice of availability of the Draft FS and the Proposed Plan. The notice of availability should state that the FS complies with the AR 200-1 requirement in accordance with 40 CFR 1500 and satisfies the intent of the NEPA.
- Provide a reasonable time period, of not less than 30 calendar days, for submission of written and oral comments.
- Present an opportunity for a public meeting/availability session at or near the installation, prepare a transcript of the meeting, and make a copy of the transcript available to the public in the information repositories and administrative record.
- Prepare a responsiveness summary which addresses each of the significant written and oral comments on the FS and Proposed Plan. This summary becomes a part of the DD/ROD. A notice of availability of the DD/ROD shall be published prior to the commencement of any remedial action. The DD/ROD shall be accompanied by a discussion of any significant changes (and the reasons for such changes) made to the Draft FS.
- Prepare a fact sheet detailing the remedial design and, as appropriate, provide a public briefing/availability session prior to initiating the remedial action.
- Provide the opportunity for public inspection and copying, at or near the installation, of each item developed, received, published, or made available to the public. The information repositories should contain copies of all final technical documents, as well as news releases, fact sheets, and other summarized information of interest to the public (see Section 5.2).

#### **4.3.3 Technical Review Committee (TRC)/Restoration Advisory Board (RAB)**

The TRC or RAB are essential components for public involvement in the IRP/BRAC ERP program and are formed during the RI/FS stage, whenever appropriate.

#### 4.3.3.1 TRCs

TRCs are established as required by CERCLA Section 211 to facilitate review and comment on response actions and proposed actions at Army installations. The Army will establish TRCs for installations where there is no community interest towards establishment of a RAB. Exceptions based on national security, lack of regulatory agency interest, or the urgency of completing response actions should be requested through the MACOM/MSC.

#### 4.3.3.2 RABs

The TRC is being replaced by the RAB. Installations that already have TRCs should consider converting the committee to a RAB. A RAB is a forum of representatives of the DoD, USEPA, state and local government, and public representative(s) of the potentially affected community. RAB members can provide input to the Army's environmental restoration program at both operating, and closing or realigning installations. The RAB reflects the diverse makeup of the community, gives all stakeholders the opportunity to participate in the cleanup process and make their views known to decision makers.

RABs must be established at installations where there is property transfer to the public and, where there is sufficient, sustained community interest in the environmental restoration program. Criteria for determining sufficient interest are:

- BRAC installation where property is transferred to the public.
- An affected local, state, tribal, or federal government entity requests that a RAB be formed.
- At least fifty residents of the local community or region sign a petition requesting that a RAB be formed.
- The installation determines a RAB is needed.

Where TRCs or other similar groups already exist, they should be expanded or modified to become a RAB. Expansions/modifications include:

- Adding additional members who represent the community (10-12 total).
- Adding a community Co-Chair.
- Making meetings open to the public.
- Publishing meeting minutes.

Avenues to select public representative(s) for the RAB include, but are not limited to, issuance of news releases, and phone calls or letters of invitations to known interested parties. Ideally, the membership of the RAB should reflect the full diversity of views, ethnicity, race, and distribution of income in the affected community and region. It should be composed primarily of people who are directly affected by installation cleanup activities.

To facilitate constructive dialogue, the RAB should generally be no larger than 20 individuals, but no smaller than is necessary to adequately reflect the diverse community interests regarding installation cleanup and closure. A RAB should focus on environmental restoration issues only and is not to be a forum for other community concerns.

The RAB as a minimum will:

- Conduct regular meetings at a frequency determined by the RAB or quarterly. All RAB meetings will be open to the public.
- Develop, maintain and use a mailing list of names and addresses of interested parties who wish to receive information on the cleanup process.
- Review, discuss, and evaluate a wide range of draft and final technical documents, status reports and proposed and final plans related to cleanup.
- Identify potential project requirements and provide input on priorities among sites or projects.
- In accordance with Section 121 of CERCLA, propose cleanup levels consistent with planned land use.

Each Army installation must solicit for interest in establishing a RAB. If an installation solicits for interest and finds there is not enough support to establish a RAB, the installation must document efforts taken to determine interest and develop follow up procedures to re-evaluate community interest. Documentation must be attached to the IAP/BCP Abstract.

A more detailed discussion of the RAB may be found in:

- U.S. Army Restoration Advisory Board and Technical Assistance for Public Participation Guidance (USAEC, 1998).
- RAB Resource Book (DUSD(ES), 1996).
- RAB Implementation Guidelines (DUSD (ES), 1994).

#### 4.3.3.3 Technical Assistance for Public Participation (TAPP)

The TAPP program provides community members of RABs and TRCs with access to independent technical support through the use of government purchase orders. TAPP provides independent assistance in interpreting scientific and engineering issues with regard to the nature of environmental hazards and restoration activities at an installation.

RABs/TRCs should be encouraged to use the following as primary sources of assistance:

- Contractors already working at the installation.
- Federal and state environmental personnel responsible for the IRP/BRAC ERP at the installation.
- Volunteer sources from within the community (e.g., local universities or local or state environmental organizations).

Eligible members of RABs and TRCs may apply for TAPP services after demonstrating that other sources of assistance are unavailable or unlikely to contribute to community acceptance of environmental restoration activities at the installation.

The TAPP program allows independent technical consultants to perform projects such as reviewing IRP/BRAC ERP documents or providing technical training. Typical projects might include:

- Interpret technical documents - obtain an independent reviewer to interpret technical reports for community members of RABs and TRCs. These reports may include:
  - IRP and BRAC ERP studies and investigations (e.g., SI, RI/FS, EE/CA, and DD/RODs).
  - Risk assessments, including human health and ecological risk assessments.
  - Health assessments, such as those conducted by ATSDR.
- Review technologies - help RAB/TRC community members understand the function and implications of those technologies selected to investigate or clean up sites at the installation (e.g., understand how vapor extraction works, under what conditions the technology is appropriate).
- Participate in RRSEs - assist the RAB/TRC in developing input into the RRSE process. Community members may participate directly in the evaluation of relative risk factors at a site or review and provide input into RRSEs prepared by installation personnel.

- Understand health implications - interpret the potential health implications of cleanup levels or remedial technologies, or to explain the health implications of site contaminants and exposure scenarios, including the implications of residual contaminants left after the completion of a cleanup strategy.
- Training - technical trainers on specific restoration issues may be appropriate in circumstances where RAB members need education or supplemental information on installation restoration projects. TAPP may be used to obtain training to assist the community in understanding processes, health effects, or technologies. In most cases training can be provided by Federal or state agency personnel.

TAPP will not fund:

- Procurement of legal services, such as paying for attorney fees or expert witnesses or paying a technical assistance provider to assist an attorney in preparing legal action, political activity, or lobbying.
- For the generation of new data, such as well drilling and testing. The generation of data is the responsibility of the Army in coordination with the regulatory agencies to ensure potential hazards are adequately characterized. If the RAB identifies a circumstance where additional data collection may be necessary, these concerns should be communicated to the installation, or to the appropriate regulatory agency.
- Conduct disputes with the Army over remedy selection or any other aspect of the IRP/BRAC ERP, or to reopen CERCLA decisions.
- Epidemiological or health studies, such as blood or urine testing.
- Community outreach is a fundamental part of an installation's community relations program, and should be conducted within the context of that program. One mechanism used successfully by many installations is the development and publication of fact sheets or newsletters, providing important information to the general public about the installation's restoration program. This activity is funded by the installation's ER,A and BCA funding, which covers administrative costs incurred by the RABs.

The actual application is a two page form within which the RAB/TRC can describe their project, state why TAPP is the appropriate source for assistance, and confirm that the project is the result of a majority decision by the community members of the RAB/TRC. The Installation Co-Chair will review the application to ensure that it is complete and describes an appropriate project, that will likely be within budget. The Co-Chair, in coordination with the RAB/TRC, should prepare a draft SOW. The application, with the SOW attached, will be forwarded to the Installation Commander for approval.

The Installation Commander, or other designated authority, has the responsibility for approving or denying the proposed project. The commander must provide a written explanation to the RAB/TRC if the TAPP request is denied.

TAPP assistance is provided via government purchase orders. The installation will contract and manage the TAPP contractor, and will serve as a liaison between the community and the contracting office. Current policy limits TAPP expenditures to an annual maximum of \$25,000 or 1 percent of the Cost-to-Complete restoration activities, whichever is less, and a lifetime maximum of \$100,000, unless extenuating circumstances warrant a waiver of these limits. See Section 6.3.3.6 for more information on TAPP funding.

The Installation Procurement Office processes the approved request as a purchase order using the simplified acquisition procedures for purchases under \$25,000. The use of the simplified acquisition procedures allows the contract office to solicit bids over the telephone. If the statement of work is complex, they can make a written notification available to potential bidders. The award can be made on the basis of price alone or the consideration of price and other factors, such as quality of service or special requirements. See Section 7.5 for a discussion of the simplified acquisition process in more detail and Section 7.6 for more details on contracting for TAPP projects.

There may be instances where the community members of the RAB/TRC wish to appeal a TAPP decision by the Army. For example, the installation commander may deny an application for TAPP because the budget cannot accommodate the cost near the end of a fiscal year. Under the appeal process the Installation Commander is given a two week review, followed by the MACOM 30-day review, and finally, the DASA(ESOH) 30-day review.

The following ground rules for appeal apply:

- Majority of RAB/TRC community members must agree.
- RAB/TRC must appoint single spokesperson.
- Written justification must accompany appeal.
- Appeals must follow process and cannot skip levels.

See U.S. Army Restoration Advisory Board and Technical Assistance for Public Participation Guidance (USAEC, 1998) for more details.

#### **4.3.4 Public Participation Requirements Relating to Removals and Remedial Action**

- Requirements for public participation in removal actions differ in some respects from those described for remedial actions. The short duration and often emergency nature of removals dictate the accurate and swift spread of information. Section 300.415(m) of the NCP provides for the rapid dissemination of information by specifying that the following activities be undertaken for all removals:
- Designate a spokesperson to inform the community of actions taken, respond to inquiries, and provide information concerning the release.
- Notify the public, including at a minimum immediately affected citizens, state and local officials, and when appropriate, civil defense or emergency management agencies, through the spokesperson, of the nature of the situation and the actions underway to mitigate any damage.



- Coordinate with MACOM/MSC and the appropriate agencies on all news releases or statements made by participating Federal agencies. Clearance procedures for release of information are contained in AR 360-5 (Department of the Army, 1986).

When an action is an emergency removal taken because of immediate and substantial endangerment to human health or the environment, the CRP and public review and comment requirements will not strictly apply, although the public should be informed of actions taken.

In cases where on-site removal is expected to extend beyond 120 days from the initiation of the action, the community interviews, CRP, and information repository requirements associated with remedial actions will apply and should be accomplished within 120 days of the initiation of action. Where there is a planning period of at least six months prior to the initiation of a removal, the comment period and response requirements will also apply. Under Army and USEPA guidance, a CRP must be prepared for all remedial actions and any removals where time permits, as previously discussed. CRPs provide a written summary of the concerns identified during the community interviews along with a detailed description of the community relations program designed on the basis of these interviews and other research. CRPs should focus on site-specific community relations techniques and approaches and avoid discussion of generic program goals. Guidance on CRPs can be found in:

- Commander's Guide to Public Involvement in the Army's Installation Restoration Program (USATHAMA, 1990).
- Community Relations in Superfund: A Handbook (USEPA, 1992).
- Innovative Methods to Increase Public Involvement in Superfund Community Relations (USEPA, 1990).
- Guidance for Community Advisory Groups at Superfund Sites (USEPA, 1995).

#### **4.4 WORKER HEALTH AND SAFETY**

Protecting the health and safety of the investigative team and of the general public is a major concern during the response action activities. Workers may be exposed to a variety of physical, chemical, and biological hazards including toxic chemicals, biological agents, radioactive materials, heat or other physical stresses, equipment-related injuries and fires, or explosions. The surrounding community may be at increased risk from unanticipated chemical releases, fires or explosions created by on-site activities. In recognition of these concerns, Section 126 of CERCLA directed the Occupational Safety and Health Administration (OSHA) to issue a rule that contains employee protection requirements for workers engaged in hazardous waste operations. The OSHA rule specifies that a program for occupational safety and health be made available for the protection of workers at a response site. Three components define the policies and procedures by which the Health and Safety Program is implemented:

- Preparation of a Site Health and Safety Plan (HSP) - The Site HSP should be prepared prior to SI, RI, and RA field activities concurrently with the Sampling and Analysis Plan (SAP) (discussed below in Section 4.6). Each Site HSP should include, at a minimum, the following 11 elements:
  - The name of a Site Health and Safety Officer and the names of key personnel and alternates responsible for site safety and health.
  - A safety and health risk analysis for existing site conditions, and for each site task and operation.
  - Employee training assignments.
  - A description of personal protective equipment to be used by employees for each of the site tasks and operations being conducted.
  - Medical surveillance requirements.
  - A description of the frequency and types of air monitoring, personnel monitoring, and environmental sampling techniques and instrumentation to be used.
  - Site control measures.
  - Decontamination procedures.
  - Standard Operating Procedures (SOPs) for handling, transporting, labeling, and disposing of hazardous wastes at the site.
  - A contingency plan that meets the requirements of 29 CFR 1910.120(1)(1) and (1)(2).
  - Entry procedures for confined spaces.
- Site briefings - Specifies that a safety briefing will be held prior to initiating any site activity and to ensure that employees are appraised of site hazards and provisions of the Site HSP, and to ensure that the plan is being followed.
- Site inspections - Site auditing to evaluate compliance with, and effectiveness of, the Site HSP. The Site Health and Safety Officer shall carry out the inspections.

Additional guidance regarding worker health and safety can be found in:

- AR 385-10, The Army Safety Program (Department of the Army, 1988).
- Health and Safety Requirements for Employees Engaged in Field Activities (USEPA, 1981).
- Standard Operating Safety Guides (USEPA, 1984).
- Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (NIOSH/OSHA/USCG/USEPA, 1985).

#### 4.5 DATA QUALITY OBJECTIVES

Data quality objectives (DQOs) are quantitative and qualitative statements specified to ensure that data of appropriate quality are collected during restoration field activities. DQOs are developed prior to data collection and should be specified for all data collection activities that take place during SI, RI, post-project monitoring, and when additional data needs are identified during the FS, RD, or RA.

Using the DQO Process will help to ensure that when a data collection event has been completed it will have accomplished two goals:

- Provided sufficient data to make required decisions within a reasonable uncertainty.
- Collected only the minimum amount of necessary data.

The DQO Process embodies both of these two main goals and it is difficult to separate which is the more important or which drives the other. For example, the DQO Process will strive to provide the least expensive data collection scheme, but not at the price of providing answers that have too much uncertainty.

For anybody involved in any aspect of using data for the purpose of making decisions, the DQO Process is a framework for developing decision performance criteria and data collection justification that will result in a data collection that meets the criteria for the lowest possible cost.

There are two problems to deal with in decision making:

- Do not have infinite resources to address the question being asked.
- Will never have 100 % guarantee that the right conclusion has been reached.

There is a corollary relating these two problems, Uncertainty and Resources are inversely related. The DQO Process attempts to weigh these two problems and provide a balance that is satisfactory to all interested parties between the resources that must be committed and the uncertainty that is acceptable.

The DQO Process achieves the balance determining the quality and quantity of data needed while minimizing costs to the extent practicable, i.e., collect enough of the appropriate data to answer the question(s) with a tolerable degree of uncertainty; but do not collect (and pay for) data that is not needed or can not be used to answer the question(s) that must be answered.

The DQO Process invests up-front time and money in the planning stages in return for ensuring that the end product will satisfy all the needs of the data users. The DQO Process strives to focus the data collection activities to only those questions that are of the most critical concern.

There are two major activities in the DQO Process:

- Very specifically state the question(s) that needs to be answered for the problem at hand.
- Very specifically state the amount of uncertainty one is willing to tolerate when attempting to answer that question with the collected data.

The DQO Process will then provide cradle-to-grave justification of data collection based on the following questions:

- What is the question?
- Will the data answer the question?
- What quality of data is needed?
- How much data is needed?
- How will the data actually be used in decision making?

The DQO Process is a planning tool that can save resources by making data collection operations more resource-effective. Good planning will streamline the study process and increase the likelihood of efficiently collecting appropriate and useful data.

Also, the data collection plan includes the DQOs and the application of Streamlined Approach for Environmental Restoration (SAFER) principles in establishing an effective data collection effort. The SAFER process was developed by DOE to effectively recognize and manage the uncertainties inherent in the environmental restoration process. SAFER integrates the DQO process with the observational approach. For more information refer to: Streamlined Approach for Environmental Restoration (SAFER) by Bottrell, D; Dailey, R; and Bitner, K; USDOE, Office of Environmental Restoration, D.C; Federal Facilities Environmental Journal 6(1):67-77, Spring 1995. The data collection plan identifies the data needs (including quality and type), how the data will be obtained in the field, and how the data will be used to make specific decisions for remedial action, especially with the maximum use of existing data. The initial evaluation directly affects the data collection plan which directly affects the level of effort used to characterize the site.

In summary, there are seven steps in the DQO Process as outlined below:

1. State the Problem
2. Identify the Decision
3. Identify Inputs to the Decision
4. Define the Study Boundaries
5. Develop a Decision Rule
6. Specify Limits on Decision Errors
7. Optimize the Design for Obtaining Data

Table 4-1 provides more details on these seven steps with regard to their purpose, activities, and outputs.

**Table 4-1. Steps in the DQO Process**

STEP	PURPOSE	ACTIVITIES	OUTPUT
Step 1: State the Problem	The purpose of this step is to clearly define the problem that requires new environmental data so that the focus of the study will be clear and unambiguous.	<ul style="list-style-type: none"> <li>Identify members of the planning team.</li> <li>Identify the primary decision-maker.</li> <li>Develop a concise description of the problem.</li> <li>Specify available resources and relevant deadlines for the study.</li> </ul>	<ul style="list-style-type: none"> <li>A concise description of the problem.</li> <li>A list of the planning team members and identification of the decision-maker.</li> <li>A summary of available resources and relevant deadlines for the study.</li> </ul>
Step 2: Identify the Decision	The purpose of this step is to define the decision that will be resolved using data to address the problem.	<ul style="list-style-type: none"> <li>State the decision.</li> <li>Categorize multiple decisions.</li> <li>State the actions or outcomes that could result from the resolution of the decision.</li> </ul>	<ul style="list-style-type: none"> <li>A statement of the decision that must be resolved using data in order to address or solve the problem.</li> <li>A list of possible actions or outcomes that would result from each resolution of the decision statement.</li> </ul>
Step 3: Identify Inputs to the Decision	The purpose of this step is to identify the informational inputs that will be required to resolve the decision, and to determine which inputs require environmental measurements.	<ul style="list-style-type: none"> <li>Identify the information that will be required to resolve the decision.</li> <li>Determine the sources for each item of information identified.</li> <li>Identify the information that is needed to establish the action level for the study.</li> <li>Confirm that appropriate field sampling techniques and analytical methods exist to provide the necessary data.</li> </ul>	<ul style="list-style-type: none"> <li>A list of informational inputs needed to resolve the decision.</li> <li>The list of environmental variables or characteristics that will be measured.</li> </ul>

**Table 4-1. Steps in the DQO Process (Continued)**

STEP	PURPOSE	ACTIVITIES	OUTPUT
Step 4: Define the Study Boundaries	The purpose of this step is to specify the spatial and temporal circumstances that are covered by the decision.	<ul style="list-style-type: none"> <li>• Define the domain or geographic area within which all decision must apply.</li> <li>• Specify the characteristics that define the population of interest.</li> <li>• When appropriate, divide the population into strata that have relatively homogeneous characteristics.</li> <li>• Define the scale of decision making.</li> <li>• Determine when to collect data.</li> <li>• Determine the time frame to which the study data apply.</li> <li>• Identify any practical constraints on data collection.</li> </ul>	<ul style="list-style-type: none"> <li>• Characteristics that define the domain of the study.</li> <li>• A detailed description of the spatial and temporal boundaries of the decision.</li> <li>• A list of any practical constraints that may interfere with the study. Characteristics that define the domain of the study.</li> <li>• A detailed description of the spatial and temporal boundaries of the decision.</li> <li>• A list of any practical constraints that may interfere with the study.</li> </ul>
Step 5: Develop a Decision Rule	The purpose of this step is to integrate the outputs from previous steps onto a single statement that describes the logical basis for choosing among alternative actions.	<ul style="list-style-type: none"> <li>• Specify the parameter that characterizes the population of interest.</li> <li>• Specify the action level for the study.</li> <li>• Combine the outputs of the previous DQO steps into an "if...then..." decision rule that defines the conditions that would cause the decision-maker to choose among alternative actions.</li> <li>• Specify the parameter that characterizes the population of interest.</li> <li>• Specify the action level for the study.</li> <li>• Combine the outputs of the previous DQO steps into an "if...then..." decision rule that defines the conditions that would cause the decision-maker to choose among alternative actions.</li> </ul>	<ul style="list-style-type: none"> <li>• An "if...then..." statement that defines the conditions that would cause the decision-maker to choose among alternative courses of action.</li> </ul>

**Table 4-1. Steps in the DQO Process (Continued)**

STEP	PURPOSE	ACTIVITIES	OUTPUT
Step 6: Specify Limits on Decision Errors	The purpose of this step is to specify the decision maker's acceptable limits on decision errors, which are used to establish appropriate performance goals for limiting uncertainty in the data.	<ul style="list-style-type: none"> <li>• Determine the possible range of the parameter of interest.</li> <li>• Define both types of decision errors and identify the potential consequences of each.</li> <li>• Specify a range of possible parameter values where the consequences of decision errors are relatively minor (gray region).</li> <li>• Assign probability values to points above and below the action level that reflect the acceptable possibility for the occurrence of decision errors.</li> <li>• Check the limits on decision errors to ensure that they accurately reflect the decision-maker's concern about the relative consequences for each type of decision error.</li> </ul>	<ul style="list-style-type: none"> <li>• The decision-maker's acceptable decision error rates based on a consideration of the consequences of making an incorrect decision.</li> </ul>

**Table 4-1. Steps in the DQO Process (Continued)**

STEP	PURPOSE	ACTIVITIES	OUTPUT
Step 7: Optimize the Design for Obtaining Data	The purpose of this step is to identify the most resource-effective sampling and analysis design for generating data that are expected to satisfy the DQOs.	<ul style="list-style-type: none"> <li>• Review the DQO outputs and existing environmental data.</li> <li>• Translate the information from the DQOs into a statistical hypothesis.</li> <li>• Develop general sampling and analysis design alternatives.</li> <li>• For each design alternative, formulate the mathematical expressions needed to solve the design problems.</li> <li>• For each design alternative, select the optimal sample size that satisfies the DQOs.</li> <li>• Select the most resource-effective design that satisfies all of the DQOs.</li> <li>• Document the operational details and theoretical assumptions of the selected design in the Sampling and Analysis Plan.</li> </ul>	<ul style="list-style-type: none"> <li>• The most resource-effective design for the study that is expected to achieve the DQOs, selected from a group of alternative designs generated during this step.</li> </ul>

Guidance regarding the DQO development process can be found in:

- Data Quality Objectives Process for Superfund: Interim Final Guidance (USEPA, 1993).
- Data Quality Objectives for Remedial Response Activities (USEPA, 1987).

To ensure that DQOs can be attained, the location and number of samples must yield data that adequately represent the site and are statistically significant.

DQOs are incorporated into a SAP and should be continually reviewed, reevaluated, and revised as needed based upon the results of each data collection activity.



## 4.6 SAMPLING AND ANALYSIS PLAN (SAP)

The purpose of a SAP is to ensure that sampling activities will be comparable to and compatible with previous activities performed at a site while providing a mechanism for planning field activities. The plan also serves as a basis for estimating costs of field efforts. A SAP is prepared for all field activities. Initial preparation takes place before any field activities begin, but the SAP may be amended or revised as the need for field activities is reassessed and rescoped.

A SAP consists of two parts:

- A Quality Assurance Program Plan (QAPP) that describes the policy, organization, functional activities, and quality assurance and control protocols necessary to achieve DQOs.
- A Field Sampling Plan (FSP) that provides guidance for all fieldwork by defining in detail the sampling and data-gathering methods to be used on a project.

Table 4-2 lists the elements that should be contained in a QAPP. Table 4-3 lists the elements of an FSP. Guidance regarding QAPP preparation can be found in:

- Interim Guidelines and Specifications for Preparing Quality Assurance Program Plans (USEPA, 1980).
- Quality Assurance/Quality Control Guidance for Removal Activities: Sampling QA/QC Plan and Data Validation Procedure, Interim Final (USEPA, 1990).

Guidance regarding the selection and definition of field methods, sampling procedures, and custody can be found in:

- Compendium of Superfund Field Operations Method (USEPA, 1987).

A Work Plan is also prepared during the RI/FS process, usually prior to preparations of the SAP, which documents the decision and evaluation made during the scoping process and presents anticipated further tasks. It also serves as a valuable tool for assigning responsibilities and setting the project's schedule and cost. A typical Work Plan outline is provided in Table 4-4. A Work Plan is usually detailed and generic while the QAPP and FSP are more site-specific.

**Table 4-2. Elements of a Quality Assurance Program Plan**

A QAPP should contain the following 14 elements:

- Project Description
- Project Organization and Responsibilities
- Quality Assurance Objectives for Measurement
- Sampling Procedures
- Sample Custody Procedures
- Calibration Procedures
- Analytical Procedures
- Data Reduction, Validation, and Reporting
- Internal Quality Control
- Performance and System Audits
- Preventive Maintenance
- Data Assessment Procedures
- Corrective Actions
- Quality Assurance Reports

Note: It is important to note that the information required for each of the elements listed above need not be generated each time a QAPP is prepared. Only site-specific aspects of a QAPP need to be explicitly described. If this information is already contained in another document, it need only to be referenced in the QAPP.

**Table 4-3. Elements of a Field Sampling Plan**

The FSP should consist of the following six elements:

- Site Background
- Sampling Objectives
- Sampling Location and Frequency
- Sample Designation
- Sampling Equipment and Procedures
- Sample Handling and Analysis

**Table 4-4. Elements of a Work Plan**

A Work Plan should contain the following eight elements:

- Introduction
- Site Background and Setting
- Initial Evaluation
- Work Plan Rationale
- Tasks
- Costs and Key Assumptions
- Schedule
- Project Management

#### **4.7 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)**

Cleanup standards are determined by applicable or relevant and appropriate requirements (ARARs) of any Federal and state promulgated laws or requirements. Section 121 of CERCLA states that the following are ARARs for the hazardous substance, pollutant, or contaminant concerned:

- Any standard, requirement, criteria, or limitation under any Federal environmental law.
- Any promulgated standard requirement, criteria, or limitation under a state environmental or facility site law that is more stringent than any Federal standard.

Compliance with ARARs is a threshold criterion regarding remedy selection, therefore, determining what ARARs are and whether a remedy will comply with them is a critical importance to the remedial action. As the phrase implies, ARARs consist of both “applicable” and “relevant and appropriate” standards and requirements. The NCP states that an applicable requirement is one which specifically addresses a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstances at a CERCLA site. If it is determined that a requirement is not applicable to a specific release, then the requirement shall be examined to determine if it is relevant and appropriate to the circumstances of the release. Relevant and appropriate requirements have a greater subjectivity involved, therefore are more difficult in assessing. Criteria to be weighed in assessing whether a standard is relevant and appropriate include:

- The purpose of the requirement being considered and the purpose of the CERCLA action.
- The medium (groundwater, surface water, soil, etc.) regulated or affected by the requirements and the medium contaminated at the site.
- The substances regulated by the requirements and the substances at the site.
- The activities regulated by the requirement and the remedial action contemplated.
- Any variances, waivers, or exemptions of the requirement and their availability for the circumstances at the site.
- The type of site regulated and the type of place affected by the release or CERCLA action.
- The type and size of the structure or facility regulated and the type and size of the structure affected by the release or contemplated by the CERCLA action.
- Any consideration of use or potential use of the affected resource at the site.

To be considered requirements (TCBRs) are non-promulgated advisories (such as reference doses or potency factors), criteria, and guidance issued by Federal and state governments. TCBRs do not have the same status of ARARs; however, Section 300.400 of the NCP specifies that TCBRs shall be identified as appropriate to supplement ARARs where they do not exist, or where it has been determined the ARARs are insufficient to ensure protection of human health and the environment at that particular release.

CERCLA actions may have to comply with several types of requirements. The following classification was developed to provide guidance on how to identify and comply with ARARs:

- Contaminant-specific ARARs set health or risk-based concentration limits or ranges in various environmental media for specific hazardous substances, pollutants, or contaminants (e.g., maximum contaminant levels, Federal Water Quality Criteria, National Ambient Air Quality Standards, RCRA Groundwater Protection Standards).
- Location-specific ARARs set restrictions on activities within specific locations, such as wetlands and floodplains, and depend on the characteristics of a site and its immediate environs (e.g., Federal and state siting laws for hazardous waste facilities, sites on the National Register of Historic Places).
- Action-specific ARARs set controls or restrictions on particular kinds of remedial activities that may be selected to accomplish a remedy. These ARARs may specify particular performance levels, actions, or technologies to be used to manage hazardous substances, pollutants, or contaminants (e.g., RCRA regulations for closure of hazardous waste storage or disposal units, RCRA incineration standards).

Remedial actions conducted entirely on-site need only comply with the substantive aspects of ARARs and not the administrative aspects such as permitting (specifically exempted under CERCLA Section 121(e) or administrative reviews. If the remedial actions are to be conducted under RCRA authority, RCRA Part B Treatment Permits may be required. Administrative procedures are not considered ARARs and, therefore, need not be pursued during the planning or implementation of remedial actions.

In order to avoid inordinate delay or duplication of effort, the Army (i.e., members of the TRC/RAB, installation personnel, USAEC, and the executor) should work closely with the USEPA and the states to ensure that each is notified of the requirements the others have determined to be applicable or relevant and appropriate, and to ensure that appropriate ARARs are identified and considered at critical steps in the remedial planning process as outlined in Table 4-5. The Army should negotiate with the USEPA and the state to resolve any differences of opinion regarding Federal or state ARARs.

A requirement that is relevant and appropriate must be complied with to the same degree as if it were applicable. However, there is more discretion in this determination, for it is possible for only part of a requirement to be considered relevant and appropriate, the rest being dismissed if judged not to be relevant and appropriate in a given case. In the event that the risk is determined to be below any level of concern, only applicable requirements are followed. In this case, there would not be a review of relevant and appropriate requirements.

A remedial action must attain all Federal and state ARARs upon completion unless one of the following waivers is found to be applicable under CERCLA Section 121(d)(4)(a-f) or Section 300.430(f)(1)(ii)(C) of the NCP:

- The action selected is only part of a total remedial action that will attain the ARAR when completed.
- Compliance with the ARAR at the site will result in greater risk to human health and the environment than alternative options.
- Compliance with the ARAR is technically impractical from an engineering perspective.
- The remedial action selected will attain a standard of performance that is equivalent to that required under the otherwise applicable requirement through use of another method or approach.

For state ARARs, when the state has not consistently applied (or demonstrated the intention to consistently apply) the ARAR in similar circumstances at other remedial actions within the state, the ARAR can be challenged by the installation. In these cases, the installation should obtain guidance from the MACOM, USAEC, or ODEP.

**Table 4-5. Army and State Roles in Identifying and Complying with ARARS**

<u>STEP</u>	<u>ARMY</u>	<u>STATE</u>
RI/FS Scoping	Identify preliminary contaminant and location-specific ARARs. Initiate communications to facilitate identification of state ARARs.	State requested to provide preliminary contaminant and location-specific ARARS within 30 days of receipt of request (NCP, Section 300.515(g)(2)) or within the time period specified in the IAG (for NPL sites).
Site Characterization	Review Federal contaminant and location-specific ARARS and TBCRs.	State requested to verify contaminant and location-specific ARARS and TBCRs.
Screen Alternatives	Identify action-specific ARARs for each proposed alternative.	State requested to identify action-specific ARARs for alternatives that passed through screening process within 30 days of request, or as specified in the IAG (for NPL sites).
Detailed Analysis of Alternatives	All ARARs and TBCRs for each alternative are examined as a package to determine what is needed to comply with other laws and to be protective.	State requested to certify identification of action-specific ARARs.
Selection of Remedy	Selected alternative must be able to attain all Federal and state ARARs unless statutory waivers are invoked.	-----
Remedial Design	Ensure that technical specifications of construction attain ARARs.	-----

In cases where the attainment of ARARs is not practicable, documentation must be produced that explains why the removal precludes the attainment of all ARARs. TBCRs shall be considered in formulating the removal, as appropriate and where necessary to be protective.

CERCLA Section 121(f) requires that at least 30 days prior to the publication of the ROD, if an ARAR is waived for a proposed remedial action, then the Army shall provide an opportunity for the state to concur or not concur with the proposed remedial action. If the state concurs, or does not act within 30 days, the remedial action may proceed. If the state does not concur with the remedial action selected and desires to have the remedial action conform to the ARAR, the state may bring an action in U.S. District Court within 30 days of notification for the sole purpose of determining whether the remedial action selected is supported by substantial evidence.

Removals shall, to the greatest extent practicable considering the emergency nature of the situation, attain or exceed Federal and state ARARs. Waivers from attaining Federal and state ARARs as previously discussed in this section, may be used, where applicable, for removals. In cases where the attainment of ARARs is not practicable, documentation must be produced that explains why the removal precludes the attainment of all ARARs. TBCRs shall be considered in formulating the removal, as appropriate and where necessary to be protective.

Additional guidance on identifying and complying with ARARs can be found in:

- CERCLA Compliance with Other Laws Manual: Interim Final Part I (USEPA, 1988) and Part II (USEPA, 1989).
- Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (USEPA, 1988).

#### **4.8. RISK ASSESSMENTS**

Risk Assessments consist of three key elements:

- A Baseline Risk Assessment.
- Refinement of preliminary remediation goals.
- Remedial alternative risk evaluation.

Baseline Risk Assessments are an evaluation of the potential threat to human health and the environment in the absence of any remedial action. The NCP calls for a site-specific Baseline Risk Assessment to be conducted, as appropriate, as part of the RI. Specifically, the NCP states that the Baseline Risk Assessment should “characterize the current and potential threats to human health and the environment that may be posed by contaminants migrating to ground water or surface water, releasing to air, leaching through soil, remaining in the soil, and bioaccumulating in the food chain.” The information developed in the Baseline Risk Assessment provides the basis for:

- Determining whether or not remedial action is necessary.
- Modifying preliminary remediation goals.
- Developing and evaluating remedial action alternatives.
- Justifying the implementation of a remedial action.
- Satisfying the NCP requirement to complete a detailed analysis of the no action alternative, including potential human health impacts.
- Focusing on the contamination problem associated with the site.

The Baseline Risk Assessment process has two components:

- Human Health Risk Assessment.
- Ecological Risk Assessment.

The Baseline Risk Assessment is prepared as an integral part of the Site Characterization step in an RI/FS. Continuation of the RI/FS is contingent upon the findings that releases create substantial threats to human health or the environment. The results of the Baseline Risk Assessment may indicate that the site does not pose an actual or potential threat to human health or the environment. In these cases, the RI/FS report, to include all appropriate documentation, can be finalized. In coordination with the USEPA and state regulatory agencies, the Proposed Plan and ROD will be prepared to reflect no further actions are required.

Refinement of preliminary remediation goals is the second element of a risk assessment. Remediation goals should be based on current use or reasonable future use of a site. For BRAC sites, the future land use should be based on a final Community Reuse Plan or alternatives for reuse identified by the Local Redevelopment Authority. These goals are based on risk quantification and chemical-specific ARARs, and are developed by:

- Identifying chemical-specific ARARs.
- Identifying levels based on risk factors where chemical-specific ARARs are not available or situations where multiple contaminants or multiple exposure pathways make ARARs non-protective.
- Identifying non-substance-specific goals for exposure pathways (if necessary).
- Determining a refined preliminary remediation goal that is protective of human health for all substance/exposure pathway combinations being addressed.



The Baseline Risk Assessment and refinement of preliminary remediation goals generally are performed in conjunction with the site characterization step of the RI/FS. See Section 3.5.2.

The third element of the risk assessment, remedial alternatives risk evaluation, is an integral part of the detailed analysis of alternatives step. See Section 3.5.6 for a more detailed discussion of criteria. Risk information is used to evaluate each alternative by three of the nine criteria applied to selection of the final remedy. These three risk criteria are:

- Overall protection of human health and the environment.
- Long-term effectiveness and performance.
- Short-term effectiveness.

#### **4.8.1 Human Health Risk Assessment**

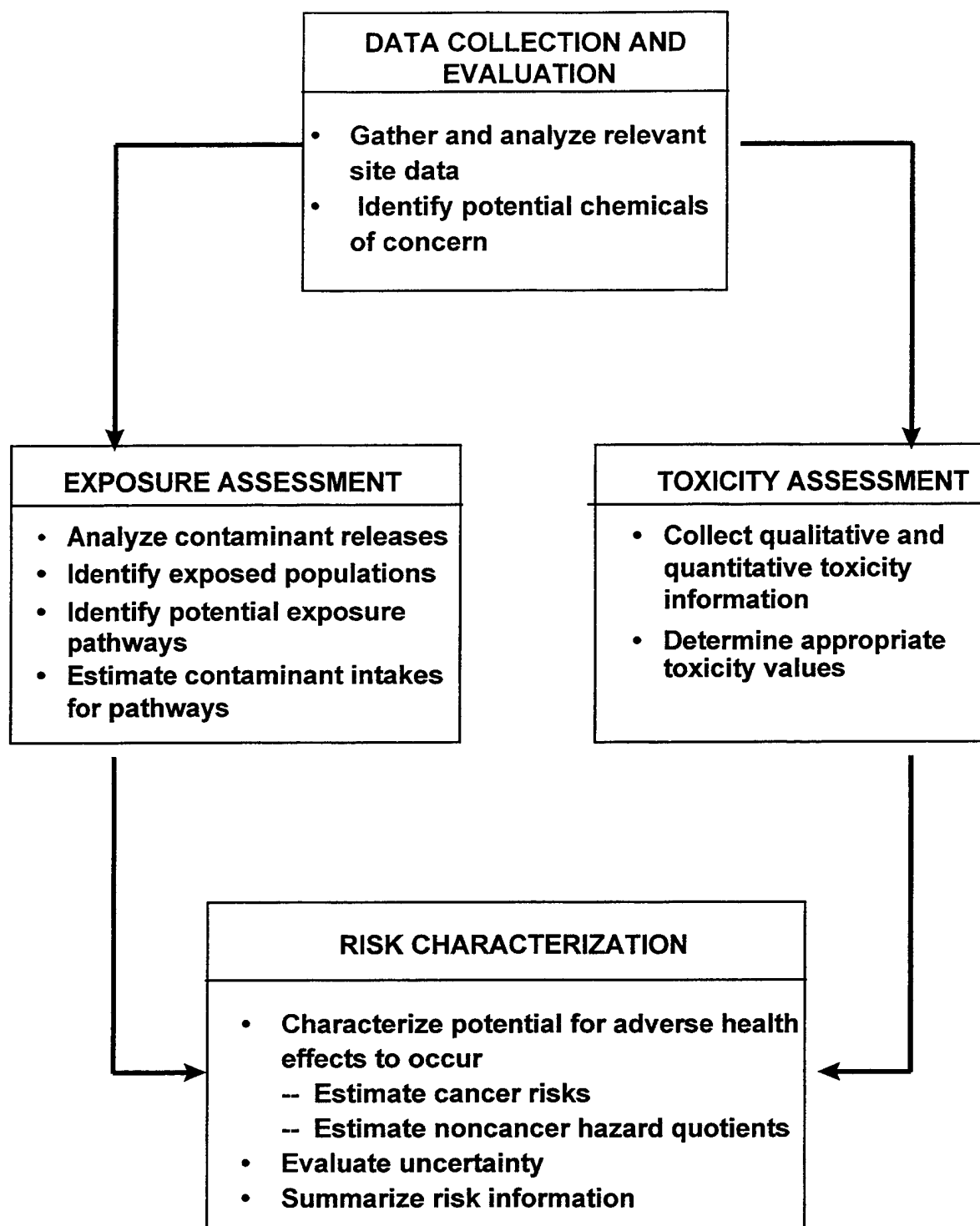
The purpose of the Human Health Risk Assessment is to characterize the nature and extent of potential adverse impacts from chemicals found in the air, soils and/or water at a site. The risk assessment process synthesizes available data on exposure of specified receptors and the toxicity of chemicals of concern (COCs) to estimate the associated risk to human health.

Human Health Risk Assessments for an RI/FS will require approval by the U.S. Army Surgeon General. The executing agency should coordinate such assessments with the USACHPPM through normal command channels. It is critical to alert USACHPPM at the beginning of any IRP or BRAC project that could lead to Public Health Evaluations. Funds could be wasted and schedules severely delayed if the proper data or DQOs are not coordinated with the medical community.

The human health component of the Baseline Risk Assessment process includes four steps, their interrelationships are illustrated in Figure 4-2.

##### **4.8.1.1 Data Collection and Evaluation**

Data collection and evaluation involves review of available site data to characterize the site, determine potential site-related COCs, and identify exposure media and receptor populations. Key questions are identified and plans for addressing them are made in this initial stage.



Source: Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (USEPA, 1989)

**Figure 4-2. Steps in the Human Health Component of the Baseline Risk Assessment Process**

#### **4.8.1.2 Exposure Assessment**

An exposure assessment is conducted to estimate the magnitude of actual and/or potential human exposures to determine the frequency and duration of these exposures, and to identify the pathways by which humans are potentially exposed. In the exposure assessment, reasonable maximum estimates of exposure are developed for both current and future land-use assumptions. Current exposure estimates are used to determine whether a threat exists based on existing exposure conditions at the site. Future exposure estimates are used to provide decision-makers with an understanding of potential future exposures and threats and include a qualitative estimate of the likelihood of such exposures occurring. Conducting an exposure assessment involves analyzing contaminant releases; identifying exposed populations; identifying all potential pathways of exposure; estimating exposure point concentrations for specific pathways, based both on environmental monitoring data and predictive chemical modeling results; and estimating contaminant intakes for specific pathways.

The results of this assessment are pathway-specific intakes for current and future exposures to individual substances.

#### **4.8.1.3 Toxicity Assessment**

The toxicity assessment step of Baseline Risk Assessment considers:

- Types of adverse health effects associated with chemical exposures.
- The relationship between magnitude of exposure and adverse effects.
- Related uncertainties such as the weight of evidence of a particular chemical's carcinogenicity in humans.

Typically, risk assessments rely heavily on existing toxicity information developed on specific chemicals. Toxicity assessment for contaminants is generally accomplished in two steps: hazard identification and dose-response assessment. The first step, hazard identification, is the process of determining whether exposure to an agent can cause an increase in the incidence of an adverse health effect (e.g., cancer, birth defect). The second step, dose-response evaluation, is the process of quantitatively evaluating the toxicity information and characterizing the relationship between the dose of the contaminant administered or received and the incidence of adverse health effects in the exposed population. From this quantitative dose-response relationship, toxicity values are derived that can be used to estimate the incidence of adverse effects occurring in humans at different exposure levels.

#### 4.8.1.4 Risk Characterization

The risk characterization identifies the risk associated with each contaminant for each pathway and for each exposure scenario. There are two types of risks, carcinogenic and non-carcinogenic. The carcinogenic risk is expressed as a probability, with the acceptable range of  $10^{-4}$  to  $10^{-6}$ . The non-carcinogenic risk is expressed as a hazard quotient, which is the exposure level compared to a reference value. The USEPA has determined that a Hazard Index (the sum of the hazard quotients) of less than one is acceptable. As part of the risk characterization there is a discussion of the uncertainty of the analysis (data quality, reliability of the uptake models and toxicity information, uncertainty of pathways, etc.). This information is used to explain the significance of the calculated risk values.

#### 4.8.1.5 Regulatory Framework

The regulatory framework for performing human health risk assessments has been established through a series of guidance documents issued by USEPA and other regulatory agencies since the early 1980s. Guidance developed to define the objectives and approaches for human health risk assessments are:

- PAM 40-578 Health Risk Assessment Guidance for the Installation Restoration Program and Formerly Used Defense Sites (Department of Army, 1996).
- RCRA Facility Investigation Guidance Vol. I-IV (USEPA, 1989).
- Guidelines for Carcinogen Risk Assessment (USEPA, 1986).
- Guidelines for Risk Characterization (USEPA, 1995).
- Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual (USEPA, 1989).
- Superfund Exposure Assessment Manual (USEPA, 1988).
- Exposure Factors Handbook (USEPA, 1989).
- Exposure Assessment Methods Handbook (USEPA, 1989).
- RCRA Facility Assessments (DOE, 1996e).
- RCRA Facility Investigation (DOE, 1994b).

#### **4.8.1.6 Army Guidance**

It is DoD and Army policy that the community's reuse plan be used as the basis for the proposed action in the NEPA documents. The proposed reuse should also be used in evaluating future reuse scenarios for the risk assessment.

For military housing, an exposure duration of five years is more appropriate than the 30 years used by EPA.

### **4.8.2 ECOLOGICAL RISK ASSESSMENT**

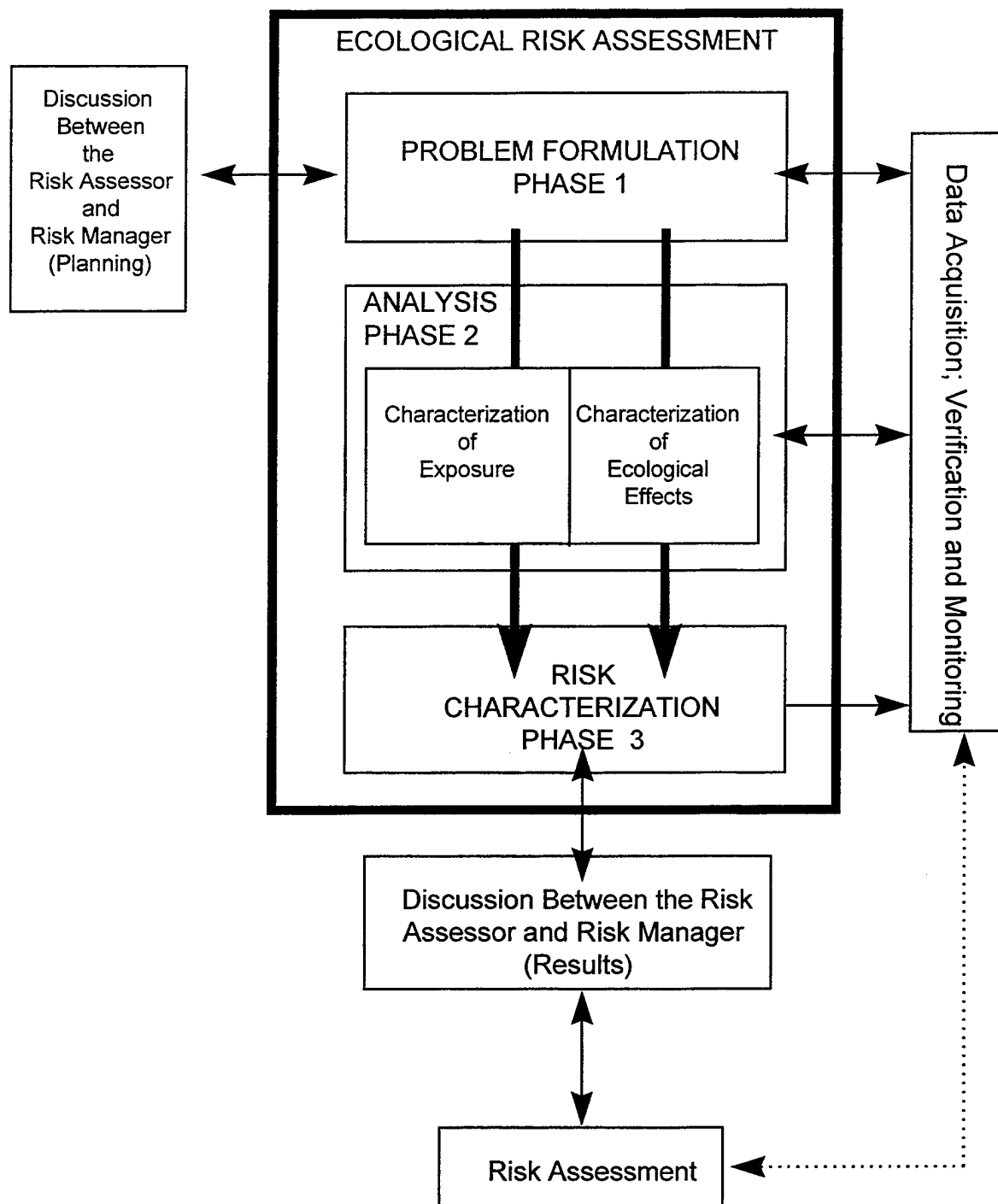
An Ecological Risk Assessment (ERA) is a process to evaluate the likelihood that adverse ecological effects are occurring or may occur in site plants and animals, as a result of exposure to one or more stressors. Stressors are chemical, physical, or biological influences causing a negative impact on the populations or ecosystems at risk. ERAs can be challenging to perform because of the great deal of natural variability in ecosystems. Likewise, determining what is a healthy ecosystem can be difficult.

The Biological Technical Assistance Group (BTAG) was established to provide Army installations with personnel who have experiences in ERAs and ecological toxicity. The BTAG can help RPMs/BECs conduct ERAs and negotiate ERA scopes with the USEPA and state regulators. The BTAG is comprised of personnel from USAEC, USACHPPM, USACE, Corps of Engineers Waterway Experimental Station (WES), and the U.S. Army Chemical and Biological Defense Command (CBDCOM). Installations that are planning an ERA or the Executing Agency should coordinate early in the ERA process with the BTAG (reached through the BTAG Coordinator at USAEC) to ensure that the proposed ERA will meet USEPA and Army standards.

ERAs are needed to meet requirements under Superfund and RCRA to ensure protection of the environment. In the site investigation and, or remedial investigation phase of the CERCLA or the RCRA process, baseline risk assessments are used as a tool to aid in determining whether site risks justify mitigation efforts. ERAs are also used to properly identify remedial alternatives. ERAs should be conducted in conjunction with human health risk assessments to avoid duplication of efforts.

#### **4.8.2.1 ERA Framework**

The process for conducting an ERA is a paradigm that was developed by the USEPA. The ERA framework is similar to that of a Human Health Risk Assessment. The ERA consists of three interactive phases (see Figure 4-3).



**Figure 4-3. Framework for Ecological Risk Assessment**

- **Problem Formulation** - The problem formulation (PF) process for a site begins by characterizing exposure and ecological effects, an evaluation of the stressor characteristics, the ecosystem potentially at risk, and the ecological effects expected or observed. Assessment and measurement endpoints are then identified. An endpoint is defined as a characteristic of an ecological component that may be affected by exposure to the stressor (e.g., increased mortality in fish). At this point, a conceptual model should be used to predict (hypotheses formulation) the actual impact of the stressor on the individuals, populations and communities of concern. The hypotheses are evaluated in the Analysis phase of the framework. At the conclusion of the PF it is important to decide whether or not the risk assessment should proceed further based on available information.
- **Analysis** - During the Analysis phase the working hypotheses developed during the PF phase are examined in order to link exposure assessment to ecological effects. The characterization of exposure begins with determining what stressors are present at a site. The characterization of exposure will typically include the determination of where a contaminant is located on site, and what physical/chemical properties lead to its environmental fate and transport. In ecosystem characterization the relevant abiotic and biotic parameters are evaluated. Biotic parameters represent the living organisms at the site; whereas, the abiotic parameters of the ecosystem characterization include topography, geology, hydrology and climatic patterns. Once the stressor characteristics and the ecosystem potentially at risk have been identified an exposure profile can be produced. The exposure profile evaluates pathways of contaminants through the ecosystem and determines magnitude of actual or potential environmental exposures.
- **Risk Characterization** - The risk characterization phase uses input from the Analysis phase to determine the likelihood of defined exposures resulting in adverse ecological effects. This information may come from direct sampling efforts and/or estimates derived from reports and literature.

A variety of models and technical test methods are available to assist the ecological risk assessor in these phases.

Hazard Quotients or probabilistic risk estimates are the principal tools of risk estimation and are computed in this phase. The Hazard Quotients are estimates relating presumed exposure concentrations to known or extrapolated effects levels of toxicants. A separate Hazard Quotient is calculated for each contaminant/receptor pair. In general, Hazard Quotients greater than 1.0 are considered to indicate a potential risk. In comparison, probabilistic risk estimates allow for a more precise quantitation of risks and relies on statistical derivation. However, this approach requires substantially more investment of resources. In using either method the quality and quantity of data is paramount.

Risk management is interconnected with the findings obtained in the risk characterization phase. Risk management is used to describe the process of evaluating alternative actions to mitigate ecological risks and selecting among them. The selection process requires the use of value judgments on such issues as the acceptability of risk and the reasonableness of the cost of control.

If a finding of no significant risk is apparent in the earlier phases of the ERA framework, then Risk Management concepts will not need to be employed. However, once a decision has been made to undertake site cleanup, the nature and extent of remedial activities must be determined. There is a trade off in risk management between destructive remediation and leaving residual contamination. In some situations the remediation process can severely destroy a particular habitat, while residual contamination may only diminish that habitat. This is where value judgments among stakeholders plays an important role.

#### 4.8.2.2 Tiered Approach to ERA

The formulation of a tiered approach to performing ERAs has been recommended by the Tri-Services and the US Army Corps of Engineers. The purpose of a tiered approach to performing ERAs is to do only the work necessary to characterize the risk to an ecological system with an acceptable degree of uncertainty. In this regard, the risk assessment will remain focused and save both time and money. Each tier is designed to address data gaps identified in the subsequent tier. Three tiers have been addressed (Table 4-6). These may be casually defined as: Tier 1 - Literature Search; Tier 2 - Limited Complexity Evaluation ; and Tier 3 - Complex Evaluation. The tiers are defined on the basis of progressive increases in the level of concern of inputs. These tiers are evaluated for each component in the framework for an ERA.

**Table 4-6. Tiered-Analysis Process**

<b>Tier #</b>	<b>Description</b>
TIER 1	Involves a literature search of available resources such as RI results, existing field data, and historical site information. These data may then be used to develop preliminary hazard indices (risk quotients).
TIER 2	Should address site-specific issues, limiting reliance on literature-cited values. Will include models, laboratory tests, or limited field studies to address data gaps. Measurement endpoints are more complex, relying on specific studies that address data gaps identified in Tier I.
TIER 3	Involves increased complexity, combining site-specific field observation with laboratory and field data. Studies involve longer-term investigations. The uncertainties associated with the measurement endpoints is reduced, resulting in stronger data and greater confidence.

Note: With each new tier the uncertainty associated with the overall data should become reduced, resulting in greater confidence.



For additional information see:

- Tri-Service Procedural Guidelines for Ecological Risk Assessments (ERDEC, 1996).
- Ecological Risk Assessment (USEPA, 1992).
- Proposed Guidelines to Environmental Risk Assessments (USEPA, 1996).
- Ecological Assessments of Hazardous Waste Sites (USEPA, 1989).
- Ecological Risk Assessment Guidance For Superfund: Process For Designing And Conducting Ecological Risk Assessments (USEPA, 1997).

#### **4.9 HEALTH ASSESSMENTS**

Under CERCLA Section 104, the Agency for Toxic Substances and Disease Registry (ATSDR) must conduct a Health Assessment for every site proposed for inclusion on the NPL; for sites where individuals have been exposed to a hazardous substance for which the probable source of the exposure is a CERCLA release; and for non-NPL sites if requested by "a licensed physician or any individual." Health Assessments will be reviewed by the U.S. Army Surgeon General. USACHPPM is the Army and DoD point of contact for Health Assessments and ATSDR.

DoD has entered into a Memorandum of Understanding (MOU) with ATSDR that delineates the responsibilities and procedures under which ATSDR and DoD will conduct Health Assessments.

The revised MOU is the single document governing the relationship between DoD and ATSDR. Supplemental DoD Component-specific IAGs governing Health Assessments are no longer necessary. DASA(ESOH) is the Lead Agent for the program; USACHPPM serves DASA(ESOH) as the program steward.

The purpose of these Health Assessments is to assist in determining whether current or potential risk to human health exists at a site and whether additional information on human exposure and associated health risk is needed. The assessment is a hazard evaluation that incorporates three types of data:

- Environmental contamination data obtained through the RI process.
- Health outcome data from state and local health agencies and health care providers.
- Concerns of the people living near the site being assessed.

The combination of data helps to determine the populations at risk, the potential for human exposure, and the public health implications associated with the assessed site. The Health Assessment is required to be completed to the maximum extent practicable before completion of the RI/FS. At the completion of each Health Assessment, the ATSDR will provide the Army with the results of the assessment, together with any of the following recommendations for further actions:

- Take action as necessary to reduce human exposure and eliminate or substantially mitigate the risks to human health; such action may include, but is not limited to:
  - Provision of alternate water supplies.
  - Permanent or temporary relocation of individuals.
  - Removals.
- Conduct epidemiological studies as necessary to determine the health effects on the population exposed to hazardous substances from a release or threatened release. These studies may require door-to-door solicitation of information.
- Establish a registry of exposed persons, taking into account the circumstances bearing on the usefulness of such a registry including the seriousness or unique character of identified diseases and the likelihood of population migration from the affected area. If population migration out of the area is likely, then exposed persons will need to be tracked.
- Establish a health surveillance program that will include, but not be limited to:
  - Periodic medical testing of population subgroups to screen for diseases for which the subgroup is at significant increased risk.
  - Development of a mechanism to refer for treatment those individuals within the subgroup that are screened positive for such diseases.

The consequences of these actions can be dramatic in terms of public reaction. Therefore, USACHPPM will keep the Installation Commander informed of progress during preparation of the Health Assessment to enable the Installation Commander to respond knowledgeably and effectively to public concern regarding exposure risks. The Installation Commander will be responsible for distribution of the completed Health Assessment or any interim reports to regulatory agencies and the public. The RPM will normally distribute Health Assessment reports to Army offices.

Additional information can be found in:

- Guidance for Coordinating ATSDR Health Assessment Activities with the Superfund Remedial Process (USEPA, 1987).
- DoD-ATSDR Memorandum of Understanding (MOU) (DUSD(ES), 1993).

#### 4.10 NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COMPLIANCE

Based on the advice of the Department of Justice, it is the position of the United States that, as a matter of law, NEPA is inapplicable to CERCLA action. NEPA values are integrated into the CERCLA RI/FS process, which is comprehensive and contains an environmental analysis that is virtually identical to that found in an Environmental Impact Statement (EIS). Because NEPA is not applicable to the CERCLA process as a matter of law, any specific integration of NEPA into an agency's CERCLA process is done as a matter of agency policy, not statutory requirement. As a result, the Installation Commander will incorporate the intent of NEPA into IRP/BRAC ERP project planning and activities, reports, Decision Documents, and public involvement planning to ensure that a particular project does not negatively affect the environment, and natural and cultural resources. The NEPA process shall be integrated as early as possible into project planning in order to ensure appropriate consideration of NEPA policies and to limit delays and future conflicts.

At BRAC installations, preparation of NEPA documentation is required to support the closure and reuse not the restoration activities. However, the potential impacts of remedial actions and use restrictions are incorporated into the NEPA document.

The type of NEPA document generated will depend on the significance of the action. Some actions are categorically excluded and only a Record of Environmental Consideration need be prepared. For more significant activities an Environmental Assessment or ultimately an Environmental Impact Statement will be required. Further information on the Army NEPA requirements is found in AR 200-2.

The contrast to the EIS process is the Environmental Assessment (EA) which is less resource intensive. An EA requires no public meetings or input, and a draft EA is not necessary. Consequently, there are fewer legal implications when performing an EA. However, an EA should be performed only when it is uncertain whether there is an environmental impact caused by the proposed action. The findings of the EA should provide sufficient evidence and analysis for determining whether to prepare an EIS or a finding of no significant impact (FONSI). A FONSI briefly presents the reasons why a proposed action will not have a significant effect on the environment and for which an EIS shall not be prepared.

Evaluation of the environmental effects of chemical releases from hazardous waste sites is a component of Baseline Risk Assessment, normally prepared as part of the site characterization step of a RI/FS. Both the human health and environmental risks posed by a site are considered in environmental effects of releases. Detailed methods for measuring environmental effects are reviewed in Section 4.8.2, Ecological Risk Assessment.

The process for compiling an environmental impact statement includes the completion of the following key steps (The NEPA regulations are published in 40 CFR, Chapter V, Parts 1500-1508.):

- Define Purpose and Need - A statement indicating the underlying need being fulfilled by the proposed action.
- Notice of Intent - A notice that an EIS is being considered. The notice shall briefly describe the proposed action and possible alternatives.
- Scoping - Process for determining the scope of issues to be addressed and for identifying the significant issues related to the proposed action. All affected Federal, state, and local agencies should be invited to assist in the scoping process.
- Identify Alternative - Includes alternatives to the proposed action, other actions, no actions, and mitigation actions. The alternative should be reasonable. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and those using common sense. The no action alternative provides a benchmark, enabling decision makers to compare the magnitude of environmental effects of the action alternatives.
- Affected Environment - This section describes the environment(s) being affected by the proposed and alternative actions (e.g., human environment).
- Environmental Consequences - Includes direct effects and their significance, indirect effects and their significance, and cumulative impacts of proposed and alternative actions.

Note: The USEPA has been given the responsibility of reviewing EISs and must respond within 30 days of their submittal.

#### **4.11 PEER REVIEW**

The ACSIM has initiated an Environmental Peer Review Program. The Peer Review Program will allow the Army to obtain independent technical expertise and ensure the appropriate level of risk reduction at a site, while ensuring effective and efficient use of the Army's environmental restoration funds. USAEC is responsible for executing the Environmental Peer Review program. The Environmental Peer Review program will be instituted in FY98 for BCA funded projects with full ER, A implementation occurring in FY99.

#### **4.11.1 Purpose**

The purpose of Environmental Peer Review is to:

- Validate and enhance the credibility of the decision making process from preliminary planning through long-term operation/long-term monitoring.
- Validate the rationale used to scope and select remedial actions.
- Ensure the use of risk-based approach as the remediation decision tool and the incorporation of a properly conducted, site-specific risk assessment.
- Promote a risk management approach to provide cost-benefit analysis.
- Evaluate the technical ability of the proposed remedial action to achieve stated remediation goals.
- Identify the opportunities to use accelerated removal actions, presumptive remedies, and innovative technologies.
- Ensure that the most cost-effective approaches are employed in order to conserve environmental funds.
- Refine cost estimates for budget submissions requirements.
- Establish consistency of restoration decisions across the Army.
- Provide "Lessons Learned" to the installations and headquarters elements.

#### **4.11.2 Environmental Peer Review Approach**

The Army has an integrated environmental restoration oversight program which is managed by USAEC. This oversight program provides budgetary, management, and technical assistance to both the IRP and BRAC ERP. The peer review process will complement and enhance the Army oversight program.

The Army Environmental Peer Review process involves three phases.

##### **4.11.2.1 Phase 1 – Project Selection**

In FY98, BRAC ERP projects are subject to review. IRP Projects at two active Army installations will be reviewed in FY98, with full IRP implementation in FY99. FY+1 and FY+2 projects from the investigation scoping phase to the optimization of remedial action operation and monitoring may be reviewed. The projects should have an estimated CTC in excess of \$2 million. Representatives from the Installation, MACOM, MSC, USAEC, and the ACSIM may

recommend other projects not meeting this criteria be reviewed, if the project could benefit from the Environmental Peer Review process.

After projects are selected for Environmental Peer Review, the Installation RPM/BEC will complete and submit information for each project to provide the Peer Review Team with a basic understanding of the projects prior to the review meeting. The Installation RPM/BEC may request the executing agency and USAEC Oversight Manager to assist in obtaining and assembling the required information. The information requirements consist of the following:

- Project summary questionnaire, to include:
  - Basis for environmental concern.
  - BRAC Cleanup Plan (BCP)/BCP Abstracts or Installation Action Plan (IAP)
  - Summary of decision drivers (e.g., screening criteria, ARARs, proposed remediation goals, land re-use, and regulatory guidance and policies).
  - Summary of risk assessment information (e.g., exposure pathways, land use, receptors, COCs, concentrations, calculated risk numbers).
  - Description of proposed remedial action.
  - Current status.
  - Reuse plan status (for BRAC sites only).
  - Funding (funds spent to date and planned).
- Location maps, boring maps with data, well maps with data, potentiometric surface maps, geologic maps, etc.
- Data tables.

Data tables and maps should include key data that is considered to be a driver in the decision-making process for additional work, risk evaluation, or cleanup.

#### **4.11.2.2 Phase 2 – Environmental Peer Review Forum/Team Description**

An appropriate review structure will be established on a three level approach, in order to ensure the level of review is consistent with the number of projects and project complexity.

Environmental Peer Reviews will be conducted at the following three levels:

Level 1 – reviews will be conducted at the installation whose projects are being reviewed. This level would typically be appropriate when there are four or more major projects requiring review. Based on the level of review required, peer team site visits are deemed to be cost effective and appropriate.

Level 2 - reviews will be conducted at a central location (e.g., MACOM, MSC, or geographic region). Installations involved with Level 2 reviews usually have fewer than four projects to be reviewed and it is easy to combine several installations for review over a few days, thus maximizing the efficiency of the review team.

Level 3 – reviews conducted via telephone conference. Installations have projects that do not meet the criteria; however, the projects would benefit from independent evaluation.

Environmental Peer Review Team composition includes technical personnel who have a broad knowledge of all aspects of CERCLA/SARA, RCRA, and other environmental programs. The team members will be technical experts from private consultants, USEPA and state regulatory agencies, academia, USAEC, USACHPPM, USACE, and appropriate USACE and Army laboratories. The team will consist of:

- Peer Review Coordinator – the overall coordinator for the review.
- Peer Review Facilitator – the coordinator will serve as the facilitator or will select another specialist as the facilitator.
- Core Peer Review Team Members – will be selected from a variety of organizations in the disciplines of engineering, environmental science, law, geology, hydrogeology, remediation technology, risk assessment, and environmental decision-making.
- Project-specific Members – will be selected for the expertise relating to the specific projects. Expertise could include groundwater modeling, unexploded ordnance, chemistry, ARARs, radiological, and innovative technology.

Participation by regulatory agency project managers is encouraged for both USEPA and state project personnel. These representatives play an integral role in the success of peer review. Through this communication, the regulators can articulate their position on specific issues and gain insight into the perspective brought forth by the Peer Review Team members.

#### **4.11.2.3 Phase 3 – Environmental Peer Review Team Recommendations/Results**

The Environmental Peer Review Team will provide advice and recommendations to the installation, MACOM, USAEC, and BRACO. The current decision-makers will continue to decide whether a project warrants funding. The Environmental Peer Review Team will focus on the technical merits of the project. Although technical merit is the primary goal of peer review, other factors may have a significant role in the decision making process. For example, interpretation of regulations, state requirements or guidance policies generally have a large impact on site decisions. The report that will be prepared documenting the recommendations of the peer review team, will specify the technical issues. A discussion will also be included that identifies the other factors controlling the decision making process, and the impact these factors have on risk management, and cost-benefit balance. The Environmental Peer Review Team's recommendations will be consistent with Army policy.

The Environmental Peer Review Team will provide a draft report to the installation, MACOM, MSC, USAEC, and BRACO that summarizes the results of the peer review process. The report will identify those issues that the team considers "Over-arching issues", or those that affect many aspects of the IRP or BRAC ERP. The Environmental Peer Review Team will also identify "Site-specific" issues identified, the report will summarize the status of the project as understood by the team, as well as the recommendation being made. The Environmental Peer Review Team

will provide a rationale as to why the recommendation is being made, the assumptions on which the recommendations is based, and options that the installation can consider to help implement the recommendation. The installation will prepare a written response to the draft report. This response should include a plan for implementing planning assistance which the installation believes is necessary but unavailable. The MACOM, MSC, USAEC, and BRACO may provide written comments as appropriate. If the installation does not feel that the recommendation can be carried out, the rationale must be provided. After issues have been resolved the Environmental Peer Review Team will issue the final report. The final report will be sent to the installation, MACOM, MSC, USAEC, and BRACO.



## **CHAPTER 5:**

### **DOCUMENTATION, REPORTS, AND COMMUNICATION**

The restoration process should not be considered complete at a site until all appropriate documentation of decisions and reports are submitted. Congressional and regulatory agency requirements necessitate considerable amounts of information to ensure compliance with various legislative acts. Congress and DoD require that information be tracked by site. Army Inspector General audits are required to ensure funds are being properly administered. It is essential that installations and MACOMs maintain detailed records to facilitate financial and technical reporting requirements.

#### **5.1 ADMINISTRATIVE RECORD**

An Administrative Record is a compilation of documents that record the Army's decision-making process regarding the selection of a response action. An Administrative Record must be established and maintained for each site where a response action is implemented under the authority of CERCLA.

The purposes of an Administrative Record are to:

- Serve as the basis for judicial review. CERCLA Section 113(j)(1) states that judicial review of any issues concerning the adequacy of any response action shall be limited to the Administrative Record.
- Document the Army's consideration of all significant public comments concerning the response action.
- Adequately represent the views of all parties involved.

Public participation procedures outlined in the NCP, CERCLA Sections 113(k) and 117, and Section 4.3 of this Guidance Manual will apply to the Administrative Record. The record must be available for public review and comment by the end of the RI/FS scoping step when the final RI/FS Work Plan is available. The notice of availability of the record for public inspection must be published to explain the purpose of the record, where the record is available, and how the public may participate in the development of the record.

Section 113(k) of CERCLA requires that an Administrative Record be established and made available for public inspection and copying at or near the installation. It is preferable that the record be located at an information repository on-site. However, if security requirements do not allow for ready public entry to an installation, then a copy of the record should be located at an information repository off-site, such as a local library.

Historical records are critical in supporting actions at installations should they be identified for closure. Site files should be maintained at least 10 years, consistent with Army site documentation handling requirements.

MACOMs are responsible for maintenance of Administrative Records for closed installations. The MACOM may elect to maintain the Administrative Record at a USACE District Office.

An Administrative Record shall include all information considered or relied on when selecting a response action. In general, this information includes:

- Final restoration reports.
- Correspondence with USEPA and state regulatory agencies.
- Public participation notices, transcripts, comments, and plans.

Table 5-1 lists specific information and documents for a site if considered or relied on when selecting the response action, that must be contained in an Administrative Record.

To provide a degree of control over documents included in the record, each Administrative Record must be indexed. The index should include the following information for each document:

- Title.
- Author.
- Recipient.
- Date.
- Location.

Periodic updates of the index must be made when a new document is added to the record or at consistent intervals (e.g., monthly or bimonthly).

**Table 5-1. Contents of an Administrative Record**

	<u>Remedial Action</u>	<u>Removal Action</u>
<b><u>Factual Information</u></b>		
Notification of a Release	*	*
Preliminary Assessment Reports	*	*
Site Inspection Reports	*	*
Environmental Baseline Surveys	*	*
FOSLs, FOSTs, or FOSETs	*	*
Work Plans and Amendments	*	*
Health and Safety Plans	*	*
Sampling and Analysis Plans	*	*
Verified Sampling Data	*	*
Chain of Custody Forms	*	*
Public Health Evaluations	*	*
Factual Information Submitted by Public	*	*
Remedial Investigation Reports	*	NA
Feasibility Studies	*	NA
Data Summary Sheets of Technical Models Used	*	*
Bench- or Pilot-Scale Treatability Studies	X	X
<b><u>Policy and Guidance</u></b>		
Memoranda on Site-Specific Policy and Legal Decisions	*	*
Guidance Documents	X	X
Technical Literature	X	X
<b><u>Public Participation</u></b>		
Community Relations Plans	*	**
Submissions, Such as Letters Containing Information Considered or Relied on in Selecting Response Action	*	*
Documentation of Meetings	X	X
Public Notices	*	*
Public Comments	*	*
Responses to Significant Comments	*	*
Transcripts of Public Meetings	*	*
Responses to State Comments	*	*
Fact Sheets Summarizing Cleanup Program	X	X
Attempt to Establish RAB	*	*
Results of TAPP Projects	*	*
* Document typically included in Administrative Record. ** Document typically included in the Administrative Record if removal action takes more than 120 days. X Document not typically included in Administrative Record, unless relied on when selecting response action. NA Document not applicable to type of response action indicated.		

**Table 5-1. Contents of an Administrative Record (Cont'd)**

	<u>Remedial Action</u>	<u>Removal Action</u>
<b><u>Other Party Information</u></b>		
ATSDR Health Assessment (NPL Sites)	*	*
Natural Resources Trustees Findings of Fact	X	X
Documentation of State Involvement	*	*
	*	*
<b><u>Decision Documents</u></b>		
Proposed Plans	*	*
Records of Decision	*	*
Decision Documents	*	*
Record of Decision Amendments	*	*
<b><u>Enforcement Documents</u></b>		
Administrative Orders	*	*
Interagency Agreements/Federal Facility Agreements (NPL Sites)	*	*
Affidavits	X	X
Notice Letters to PRPs	X	X
Responses to Notice Letters Containing Factual Information	X	X
<b><u>Index</u></b>		
<b><u>Other Information</u></b>		
NPL Rule-making Information Impacting on the Remedial Response	X	X
RCRA Information Impacting on the Remedial Response	X	X
Technical Information Presented by PRPs During Negotiations	X	X
Information from Telephone Logs	X	X
* Document typically included in Administrative Record. ** Document typically included in the Administrative Record if removal action takes more than 120 days. X Document not typically included in Administrative Record, unless relied on when selecting response action. NA Document not applicable to type of response action indicated.		

An Administrative Record should not include:

- Draft contractor reports.
- Draft documents not otherwise provided to the public, unless relied on when selecting a response action.
- Informal notes or comments.
- Irrelevant information related to other issues, such as liability of Potentially Responsible Parties (PRPs), documentation of the cost of implementing the selected response, HRS scoring package, or contractor work assignments.
- Documents received after finalizing the Record of Decision.
- Deliberative documents expressing opinions and recommendations generated before a decision is made, unless relied on when making a response action decision.

In addition, the following privileges and exemptions must be considered before documents are included in the public portions of the record:

- Matters of national defense or foreign policy.
- Information exempted by other statutes.
- Privileged interagency or intraagency memoranda.
- Personal privacy.
- Investigatory records compiled for law enforcement purposes.
- Records of financial institutions.

If a document is excluded from the public portion of the record because of a privilege or exemption, but contains factual information considered or relied on to make a decision, that factual information must, if feasible, be extracted and included in the public portion of the record. Any information considered or relied on which is withheld from the public portion of the record must be placed in a confidential portion of the Administrative Record. In no case can the record omit significant data considered or relied upon to justify the selection of a response action. Legal staff should be involved in the development and compilation of the record in order to ensure its adequacy and completeness for judicial review purposes.

An Administrative Record may only physically include the index and any documents unique to the site. Each site or operable unit should have a separate section in the Administrative Record. To avoid unnecessary duplication, documents that pertain to multiple sites need not be included in each section, but one copy of each of these documents must be made available at the same location as the index.

Since the Administrative Record must be present and in legible condition for judicial review purposes, the security and integrity of the record must be maintained at all times. A copy of each record and one complete set of multiple site documents not physically included in each record should be kept in a secure location, such as a locked room or file cabinet that is not accessible to the public. A separate copy of the record and a set of multiple site documents should be retained at the information repository for public inspection. In addition, controlled access to the publicly accessible record can be accomplished by using a sign-in book as a visitors record.

For NPL sites, the Army must submit a copy of each document in the Administrative Record to the appropriate USEPA regional office. These records will be maintained by USEPA in a document room and made available for public inspection and copying.

Additional guidance regarding specific requirements for an Administrative Record:

- Subpart I, Sections 300.800 through 300.825 of the NCP.
- Administrative Records for Decisions on Selection of CERCLA Response Actions (DASD(E), 1987).
- Final Guidance on Administrative Records for Selecting CERCLA Response Action (USEPA, 1990).

## **5.2 INFORMATION REPOSITORY**

The NCP requires that at least one local information repository be established at or near the installation for all remedial action sites (Section 300.430(c)(2)(iii)), and for all sites where removals last longer than 120 days (Section 300.415(c)(2)(iii)). It is preferable that two information repositories be established by the time the Community Relations Plan (CRP) is prepared: one on-post and one off-post. The on-post repository should be located at the Post Library, Public Affairs Office, or other publicly accessible place. Because the public often feels uncomfortable visiting an on-post information repository, and because security requirements sometimes do not allow for public entry to an installation, an off-post repository should be located at an easily accessible community location (local library). This location may be determined during the community interview process of the CRP. The Installation Public Affairs Staff is responsible for establishing the repository. In addition, the Public Affairs staff shall notify interested parties of the establishment of the repository, and any additions or deletions to it, as required by the NCP.

The purpose of the information repository is to facilitate public participation in the response action decision process by providing a place where items pertaining to a site will be stored and made available for public inspection and copying during reasonable times, such as 9 a.m. to 4 p.m., Monday through Friday.

The contents of the repository may include, but are not limited to, copies of the following items:

- CRP.
- Installation Assessment/Installation Assessment Update Report.
- PA/SI Report.
- EBS, FOSL, FOST, FOSET.
- RI/FS Work Plan.
- RI Report.
- FS Report.
- Proposed Plan.
- Record of Decision/Decision Document.
- Remedial Design.
- Public meeting minutes/transcripts; agendas; handouts.
- Decision Memoranda.
- News clips or press.
- Sampling data.
- Fact Sheets.
- Guidance Documents.
- Administrative Record (which will contain the items listed in Section 5.1).

If there is more than one information repository for a site, only one must contain the Administrative Record; the others must clearly note the location of the Administrative Record.

### **5.3 DECISION DOCUMENTS (DDs)**

The official term applied by CERCLA and the NCP for the documentation of a final remedial response action decision at an NPL site is a Record of Decision (ROD). There is no official term for the documentation of decisions at non-NPL sites and/or sites at which interim response action decisions have been made. The Army has adopted the term Decision Document. DDs will be used throughout this section as a generic term that applies to both NPL and non-NPL sites.

The purposes of DDs are to:

- Demonstrate that the response action chosen is consistent with, and meets the requirements of CERCLA and the NCP.
- Demonstrate that the evaluations and documentation supporting the response action satisfy the intent of the National Environmental Policy Act of 1969.
- Document Army decisions regarding response action selection.

There are three types of response actions that require DDs:

- Removals.
- Remedial action.
- No action.

Removals are preceded by a DD where practicable, i.e., when time permits. Otherwise, a DD may be prepared concurrently with or after completion of a removal.

A DD consists of three parts: a declaration; a summary of the response selection; and a community relations responsiveness summary. There may be instances where contamination is left in place. In such instances, a Human Health Risk Assessment may be required and made part of the DD to substantiate the decision. A Decision Document Outline is provided at Appendix H.

All signed DDs/RODs are reported in the IAP/BCP and DSERTS. A copy of the final DD/ROD must be furnished to the USAEC.

See Section 2.6.1 and 4.1.2 for information on the Decision Document approval process.

### **5.3.1 Community Relations Responsiveness Summary**

The community relations responsiveness summary is included as part of the final DD package and consists of a summary of public comments and Army responses, an explanation of differences between the publicly preferred alternative and the selected alternative (if appropriate), and a list of community relations activities conducted by the Army to encourage citizen input.

### **5.3.2 Review and Approval**

The following points outline the principal steps in the review and approval of DD. See Sections 2.6.1 and 4.1.2 for more details on review and approval procedures.

- The RPM prepares the DD and coordinates its review and approval.
- At a minimum, the RPM's/BEC's draft DD will be reviewed by the Installation Commander, the MACOM, and, except for No Action DDs, the action's implementing agency.
- The DD must be reviewed and concurred by USAEC, USACHPPM, and HQDA when required (see Section 2.6.1).
- The RPM/BEC then amends the DD as indicated and transmits it to State and USEPA Regional offices for comment.
- After any regulatory agency concerns are addressed, the DD is submitted to the appropriate decision authority (see Section 2.6.1).



- The approved DD is transmitted to USEPA for concurrence. In the event that USEPA does not concur, differences should be resolved as required by the IAG previously negotiated.
- Approved DDs are entered into the information repository and the Administrative Record, and distributed to members of the TRC or RAB.
- The public is notified of the availability of the DD as discussed in Section 4.3.

Any modifications to a selected response action that differ in any significant respects from the approved DD must be documented and made available for public review and comment in accordance with the CRP.

Guidance regarding DDs can be found in the Guidance for Preparing Superfund Decision Documents (USEPA, 1989).

## 5.4 DISTRIBUTION AND REVIEW OF DOCUMENTS AND REPORTS

Remedial action and removal processes involve numerous documents and reports. Responsibility for submission, review, and/or distribution varies according to the type of document or report, and may vary by project. The Installation Commander (IC) and his/her staff should be informed of documents and reports that the installation is responsible for submitting, reviewing, and distributing. See Table 5-2 for typical responsibilities of the IC. Installation Commanders may modify submission, review, and distribution responsibilities in coordination with regulatory agencies. In particular, Interagency Agreements for NPL installations involving the Army, USEPA, and state agencies may stipulate report distribution and review procedures that vary from Table 5-2. (See also the model agreement in Appendix B.)

Preliminary drafts of contractor reports are reviewed by the COR, the Installation Commander, Executing Agency, MACOM, and USAEC or others as appropriate. Normally, Preliminary Drafts are not reviewed by the regulatory agencies or the public. The COR should consolidate the comments and provide instructions to the contractor to prepare a second draft. The second draft is reviewed by the following:

- COR.
- Installation Commander.
- RPM/BEC.
- Executing Agency.
- Regional USEPA Office.
- USAEC.
- USACHPPM (risk assessment or health considerations).
- State Public Health Department and/or state environmental agency.
- Members of the TRC/RAB (depending on the project, the USEPA and State may request review of the report prior to release to the public).

Comments on the second draft are returned to the COR. The COR may require the contractor to address all or part of these comments in the final report.

**Table 5-2. Submissions, Review, and Distribution of IR/BRAC Documents and Reports**

Document	Reference	HQDA	MACOM	USAEC	USACHPPM	KO/COR <sup>1</sup>	RPM <sup>2</sup>	IC	IPAO	EPA	State	RAB	Public <sup>3</sup>	Contractor	DTIC	DLSIE	ATSDR	Congress
<b>SITE STUDIES AND PLANS</b>																		
Notification of Release	3.4.1	C	C	C		S	C		C	C								
Preliminary Assessment Report	3.4.2		C	R		R	R		C	C				S	C	C		
EBS	3.4.2		C	R		R	S	R	C	C				S	C	C		
Site Inspection Work Plan	3.4.3			R		R	R		C	C				S				
Site Inspection Sampling and Analysis Plan	3.4.3			R		R	R		C	C				S				
Site Inspection Worker Health and Safety Plan	3.4.3			R		R	R		C	C				S				
Site Inspection Report	3.4.3		C	R		R	R		C	C				S	C	C		
HRS Scoring Package	3.4.4		R	R		R	S	R	C	R	C							
NPL Listing Proposal	3.4.4	R	R	R		R	R		R	S	R							
Community Relations Plan (CRP)	3.5.1			R		R	R		S			C	C		C	C		
Notice of Record and Repository	3.5.1		C			C	R		S	C	C	C	C					
RI/FS Work Plan	3.5.1			R	R	R	R		C	C		C	C	S				
RI Sampling and Analysis Plan	3.5.1			R	R	R	R		R	R				S				
RI Worker Health and Safety Plan	3.5.1			R		R	R		R	R				S				
RI Report and Risk Assessment	3.5.2		C	R	R	R	R		R	R		C	C	S	C	C		
ATSDR Health Assessment*	3.5.2	C(b)	C(b)	R	R		R	C	C	R(b)	R(b)	C(b)	C(b)				S	
Feasibility Study	3.5.6			R	R	R	R		R	R		C	C	S	C	C		
Proposed Plan	3.5.7		C	R	R		R	R	S	R	R	R	R					
Transcript of Public Hearing	3.5.7		C				R	R	S	C	C	C	C					
Response to Comments	3.5.7		C	R	R		S	R	R	C	C	C	C					
ROD/Decision Document	3.5.7	R(a)	R	R	R		S	R	C	R	R	C	C					
Notice of ROD/Decision Document	3.5.7		C	C			S	R	C	C	C	C	C					
Interagency Agreement**	3.5.7	R	R	R			R	S		S	C							
Property Transaction Documentation <sup>4</sup>				R			S	R		C	C	C						

**CODES:**

S = Submits; R = Reviews; C = Receives Copy Only

a = For projects greater than \$6M; b = Receives copies through IC

IC = Installation Commander; PAO = Installation Public Affairs Office;

DTIC = Defense Technical Information Center; DLSIE = Defense Logistics Studies Information Exchange.

\* = for proposed and NPL sites only; \*\* = for NPL sites only.

**NOTES:**

<sup>1</sup> KO/COR represent the Executing Agency

<sup>2</sup> For the purposes of this table, RPM also refers to the BEC or FTC POC

<sup>3</sup> Indicates documents specifically intended for public distribution. All site reports and plans will be made available to the public in an information repository (See Section 5.2)

<sup>4</sup> Includes FOIS, FOST, ECOP, FOSET

<sup>5</sup> Contract documents shall pertain to all PA, SI, RI, FS, RD, RA and post-project activities performed by contractor.

**Table 5-2.**  
**Submissions, Review, and Distribution of IR/BRAC Documents and Reports (Cont'd)**

Document	Reference	HQDA	MACOM	USAEC	USACHPPM	KO/COR <sup>1</sup>	RPM <sup>2</sup>	IC	IPAO	EPA	State	RAB	Public <sup>3</sup>	Contractor	DTIC	DLSIE	ATSDR	Congress
<b>SITE STUDIES AND PLANS</b>																		
Remedial Design/Remedial Action Work Plan	3.6.1		C	R		R	R			R	R	R		S				
Bid Documents for RA	3.6.1		C			S	R											
RA Worker Health and Safety Plan	3.6.1		C			R	R			R	R			S				
RA Sampling and Analysis Plan	3.6.1		C	R		R	R			R	R	R		S				
As-Built Drawings/ List of Equipment	3.6.1		C			R	R			C	C			S				
Operations and Maintenance Manual	3.6.3		C			R	R							S				
Post-Project Monitoring Report	3.6.3		C	C	R	R	R			R	R	R		S				
Post-Project Compliance Review Reports	3.6.3		C	C	R	R	R			R	R	R		S				
<b>CONTRACT DOCUMENTS<sup>5</sup></b>																		
Request for Proposal	7.2.1					S	C	C						C				
Technical Proposal	7.2.1					R	R							S				
Cost Proposal	7.2.1					R	R							S				
Change Orders/Modifications	7.2.2.4					S	R	R						C				
<b>PERFORMANCE/FINANCIAL REPORTS</b>																		
Cash Allocation Requirements/Obligation Plans	6.2		S	R		C	C	C										
MACOM Monthly Financial Status Report	6.2		S	R		R	R	C										
Contractor Monthly Financial Performance Report	7.1					R	R							S				
Annual Reports	5.11	R	C	R														C
<b>CODES:</b> S = Submits; R = Reviews; C = Receives Copy Only a = For projects greater than \$6M; b = Receives copies through IC IC = Installation Commander; PAO = Installation Public Affairs Office; DTIC = Defense Technical Information Center; DLSIE = Defense Logistics Studies Information Exchange. * = for proposed and NPL sites only; ** = for NPL sites only.																		
<b>NOTES:</b> <sup>1</sup> KO/COR represent the Executing Agency <sup>2</sup> For the purposes of this table, RPM also refers to the BEC or FTC POC <sup>3</sup> Indicates documents specifically intended for public distribution. All site reports and plans will be made available to the public in an information repository (See Section 5.2) <sup>4</sup> Includes FOSL, FOST, ECOP, FOSET <sup>5</sup> Contract documents shall pertain to all PA, SI, RI, FS, RD, RA and post-project activities performed by contractor.																		

All final reports should be distributed as presented in Table 5-3. The USAEC Technical Information Center will ensure that copies of final reports are forwarded to the appropriate archives (i.e., Defense Technical Information Center and Defense Logistics Studies Information Exchange). The report author or the Contracting Officer's Representative, in the case of a government contract, is responsible for ensuring that reports include a completed Report Documentation Page (Standard Form 298). Appendix I provides information concerning completion of the Report Documentation Page.

**Table 5-3 . Distribution List for Regulatory Approved or Final Documents**

<b>Recipient</b>	<b>Number of Copies</b>
Commander U.S. Army Environmental Center ATTN: SFIM-AEC-RM-TIC Aberdeen Proving Ground, MD 21010-5401	4
Commander U.S. Army Environmental Center ATTN: SFIM-AEC-ERD Aberdeen Proving Ground, MD 21010-5401	1
Installation	As Required
MACOM	2

## 5.5 FEDERAL AGENCY HAZARDOUS WASTE COMPLIANCE DOCKET

The Federal Agency Hazardous Waste Compliance Docket (referred to as the “Docket”) is a list of Federal properties where hazardous waste releases have occurred or where hazardous waste operations require notification of regulatory agencies or permits. The purposes of the Docket are to:

- Identify Federal facilities that must be evaluated to determine if there is a risk to public health or the environment.
- Compile and maintain information submitted to USEPA on facilities under the provisions listed in Section 120(c) of CERCLA.
- Provide a mechanism to make information available to the public.

If not already on the Docket, Federal properties will be added when they:

- Apply to USEPA (or authorized state) for a permit to operate a treatment, storage, or disposal facility for hazardous wastes in compliance with Section 3005 of RCRA.
- Notify USEPA (or authorized state) of the generation, transportation, treatment, storage, or disposal of RCRA hazardous wastes or the production, burning, distribution, or marketing of fuels made from RCRA hazardous wastes or used oil in compliance with Section 3010 of RCRA.
- Identify to USEPA (or authorized state) any past or present Federal property at which RCRA hazardous wastes have been stored, treated, or disposed in compliance with Section 3016 of RCRA.
- Notify the National Response Center of a release of a reportable quantity of a hazardous substance in accordance with Section 103(a) of CERCLA.

Every six months, USEPA will publish in the Federal Register a list of Federal properties included on the Docket during the preceding six month period. These properties must complete a PA and, if warranted, a SI within 18 months of publication of the Docket notice.

It is the Installation Commander's responsibility to provide the PA or updates, in order that the USEPA can score the installation for possible inclusion on the NPL. The installation may choose to prepare the documentation in-house or contract through a USACE District or other government agency.

## **5.6 DEFENSE ENVIRONMENTAL NETWORK AND INFORMATION EXCHANGE (DENIX)**

As part of the DoD effort to consolidate environmental information management, a DoD-wide electronic bulletin board system has been created to facilitate and support communications and environmental awareness. This system, DENIX, incorporates the data, information, and requirements of the DoD components and contains all the information that was previously available in the DoD, Army, Navy, and Air Force bulletin boards. DENIX provides DoD personnel with a central communications platform that allows timely access to environmental related legislative, compliance, restoration, and DoD guidance information.

DENIX has become a World Web site providing users with a point-and-click graphical interface system.

DENIX is intended to serve as a central electronic "meeting place" where information can be exchanged among DoD environmental professionals worldwide. The goal is to provide the user with the capability to transfer files to/from the host computer and the user's personal computer, search and retrieve information from large databases, exchange ideas and information in a bulletin board fashion, browse environmental information from various sources, and communicate by electronic mail. Additionally, DENIX can be used as a vehicle for electronic reporting. As a reporting mechanism, DENIX facilitates the environmental reporting process by providing a file transfer mechanism for forwarding required reports (e.g., DSERTS) through the chain of command. Installation users can forward their reports to their MACOM/MSC. MACOMs can then forward their aggregated reports to USAEC

The DENIX provides access to a wide variety of information which can be downloaded to personal computers. DENIX includes:

- IRP, BRAC, the Environmental Compliance Assessment Program (ECAP), DSERTS, DSMOA, and FUDS.
- Current environmental news and environmental, legislative and regulatory alerts.
- Lists of training seminars and courses, environmental awards, and environmental job openings.
- Cultural and natural resources data and complete texts of technical papers.
- On-line electronic subscriptions to Inside USEPA Weekly Report and Daily Environmental Report.

As a portal to other systems, DENIX users can also access several environmental technical information services systems: Computer-aided Environmental Legislation Database, Hazardous Materials Management System, Environmental Statutory Database, Economic Impact Forecast System, Cultural Resources Information Bulletin Board, Hazardous Expertise Knowledge-based System, Regulations and Compliance Expertise, and Discuss with Experts Environmental Problems.

For additional information see the DENIX Interim User's Manual, May 94.

## **5.7 INSTALLATION ACTION PLANS AND BRAC CLEANUP PLANS**

### **5.7.1 Installation Action Plans (IAP)**

To assist in meeting an installation's IRP requirements, an IAP must be prepared. IAPs are the basic tools for successful management of the IRP cleanup at Army Installations. The IAP outlines the total multi-year integrated, coordinated approach to achieving an installation's restoration goals. USAEC's Installation Restoration Program Action Plan Guidance, (USAEC, 1998), supplies guidance in preparing the IAP.

IAPs must be prepared and maintained for all installations which plan to request ER,A funds. For each site within DSERTS, the IAP documents IRP requirements, the rationale for the technical approach, and corresponding financial requirements. Prior year funding and tentative cost estimates through the entire remedial process are also included. The IAP is a "living document" which needs to be updated as the IRP process proceeds.

The IAP contains: the program history, current DSERTS status information, contaminants of concern, response actions taken, major issues affecting IRP, past milestones, and realistic goals and schedules based on known and/or expected IRP projects. The IAP should include identification of any possible or future removal, interim remedial, or remedial action.

#### **5.7.1.1 Basic Requirements**

All IAPs shall have the following basic requirements:

- DSERTS - Sites addressed in the IAP will include all sites in the DSERTS data base for an installation, including "Response Complete" sites. The IAP must address all sites by DSERTS designations.
- Cost-to-Complete - Each DSERTS site with any future planned restoration activity must include estimates of the cost in the IAP. The cost estimation is achieved with the CTC model. It is important that the financial projections contained in the IAP be as consistent as possible with the CTC Study and Analysis results, as updated annually.

- **Funding Information** - IAPs require inclusion of prior, current, and future funding presented as the total IRP funding from the inception of the program to projected completion of remedial action operations and long term monitoring.
- **Restoration Advisory Board Information** - Each active Army installation participating in the IRP must determine community interest in establishing and participating in a RAB. If there is no community interest in the RAB, the installation must document the efforts taken to determine interest, the results of the efforts, and follow-up procedures to monitor the level of future interest for a RAB.
- **Approval and Concurrence** - The Installation Commander, Garrison Commander, or formally designated subordinate authority will sign the IAP indicating approval. The chief of the environmental office at the MACOM will also sign the IAP indicating concurrence.

#### **5.7.1.2 Format**

Table 5-4, Installation Action Plan Formatting Guide, summarizes the formatting and content requirements for an IAP.

#### **5.7.1.3 Distribution**

The IAP is not only pertinent to USAEC and MACOMs in order to monitor requirements, scheduling, and budgeting, but also is a key document for Federal and state regulators and the public interested in an installation's overall environmental restoration plan. The ODUSD(ES) and the Army encourage installations to use the IAP to present the total plan for restoration to appropriate regulators and interested public. The plan should present clear evidence that the Army is committed to expeditious identification and cleanup of environmental contamination, and has a credible, organized program to carry out that commitment.

It is the Installation Commanders decision to distribute the IAP outside the Army, therefore, any requests for copies of the IAP will be addressed to the installation. Although the IAP is only submitted annually to USAEC, it should be reviewed and updated prior to release to the public.



**Table 5-4. Installation Action Plan Formatting Guide**

<b>SECTION</b>	<b>DESCRIPTION</b>
Summary	(Not To Exceed (NTE) 1 page) Requires eleven specific items to be incorporated.
Installation Information	(NTE 1 page) Overview of the Installation's organization; regulatory, RAB and NPL status; changes from IRP from previous year.
Installation Description	(NTE 2 pages) Installation's historic and current activities, cause of contamination.
Contamination Assessment	Overview of IRP to date, each DSERTS site description to include any special considerations, completed, current, and future IRP phase.
IRP Summary Charts	Includes DSERTS Phase Summary, IAP Summary Report, and DSERTS RAB Report.
Schedules	Chronological list and graphics by phase of IRP milestones from start to finish, RA and IRP completion dates.
Removal/ Interim Remedial/ Remedial Action Assessment	An assessment and cost of past, current and future REM, IRA and RAs.
Approval and Concurrence	Signature of Installation Commander and MACOM.
Attachment 1 – Cost	Cost information including prior, current and future by phase and fiscal year, and EPR Report numbers.
Attachment 2 – RABs	If no community interest in a RAB, document the efforts taken to establish a RAB, results of the efforts, and state the conclusion that there was no interest.

## **5.7.2 BRAC Cleanup Plans (BCP) and BCP Abstracts**

BRAC Cleanup Plans (BCPs) are required at each closing or realigning installation where a BRAC Cleanup Team (BCT) has been established. Army guidance requires the preparation of two versions of the BCP. After the second version, the BCP should be updated as required to document progress towards site close-out. Updating after version 2 must be justified to the MACOM, which will seek approval from ODEP and the BRACO.

BCP Abstracts are submitted annually to DoD for all installations where a BCT has been established. Army Guidance requires BCP Abstracts be prepared for all BCT installations and BRAC 95 installations operating under a modified fast track program. Only the BCP Abstracts for BCT installations are forwarded to DoD. The fall submittal is used to support DoD's data call, the DoD In-process Review, and the Report to Congress. The spring submittal supports the DoD In-process Review. USAEC plans to incorporate the BCP Abstract into the DSERTS and eliminate a separate BCP Abstract data call. The goal is to have the BCP Abstract be generated as part of the DSERTS.

### **5.7.2.1 Basic Requirements**

The objective of the DoD-wide BCP initiative is to develop a comprehensive and consolidated status and strategy for expedited environmental cleanup at all BRAC installations so that property reuse can be accomplished in a timely fashion. The BCP provides the status of the installation environmental restoration program and the strategy for its eventual completion. The BCP document should reflect these elements as accurately as possible. The BCP is intended to be a public document written in language that anyone with a general knowledge of environmental restoration activities can understand.

The BCT is responsible for the management of a Five-Step BCP process as described in the BRAC Cleanup Plan (BCP) Guidebook. The five steps include:

**Step 1:** Form BCT and an Assisting Project Team. A RAB should be established by the installation and the community or state should create a Local Redevelopment Authority (LRA) early in the BRAC process.

**NOTE:** Portions of Steps 2 through 5 are performed simultaneously.

**Step 2:** The BCT and assisting Project Team conduct a Bottom up Review (BUR) of all past and ongoing environmental programs. The BCP should be the product of this BUR.

**Step 3:** During and after the BUR, the BCT should compile and adopt recommendations for streamlining or expediting ongoing environmental restoration and compliance programs (accelerated environmental cleanup).

**Step 4:** Under the direction of the BCT, the BEC normally will assume the lead and assemble and write the BCP incorporating the recommendations developed during Step 3.

**Step 5:** Execute, maintain and update the BCP through BCT/Project Team meetings.

Detailed information on the Five-Step BCP process is available in the BRAC Cleanup Plan (BCP) Guidebook (DoD, 1995).

#### **5.7.2.2 Format**

The BCP is intended to be a living document updated as determined by the BCT. A BCP includes information on the following:

- Macro-level environmental program status summary.
- Summary of base-wide disposal and reuse planning efforts.
- The installation's overall environmental strategy plan.
- The installation's long-range Master Schedule for all environmental activities.
- The installation-specific initiatives for accelerating environmental cleanup.
- The identification of impediments to progress at the installation.

As contamination is remediated, the BCP is updated to reflect cleanup and site close-out actions that have been taken, as well as any changes in community redevelopment needs.

The BRAC Cleanup Plan (BCP) Guidebook (DoD, 1995) supplies guidance in preparing the BCP and includes a required formatting.

Format for the BCP abstract was provided by Submission of Fiscal Year 1997 BRAC Cleanup Plan Abstract (ODUSD(ES), August 1997).

#### **5.7.2.3 Distribution**

The BCP and BCP Abstract are not only pertinent to BRACO, USAEC, and MACOMs for monitor requirements, scheduling and budgeting, but also, to Federal and state regulators and the public. DoD and the Army encourage installations to use the BCP and BCP Abstract to present the total plan for restoration to appropriate regulators and interested public. The plan should present clear evidence that the Army is committed to expeditious identification and cleanup of environmental contamination, and has a credible, organized program to carry out that commitment.

## **5.8 COST-TO-COMPLETE (CTC)**

DoD requires that all services develop a comprehensive estimate, by site, of the total cost for completing all environmental cleanup under the IRP/BRAC. The Army effort, the Cost-to-Complete (CTC) Study and Analysis, was completed for all Army installations, with ongoing or planned restoration activities.

DoD requires an annual update of the CTC estimate. Each DSERTS site with any future planned restoration activity must include CTC estimates. The CTC estimates are now the basis of the Army's restoration budgets. To build the IRP/BRAC budget, site-level CTC data are provided in the spring. The AEC currently calculates CTC estimates as a centralized effort at AEC, but is developing a DSERTS module to accommodate the CTC results. When the CTC DSERTS module is completed, installations will be able to view and retrieve CTC estimates for their installation, and eventually the details behind their estimate, as shown in the CTC database. The CTC will continue to be a centralized USAEC effort, to maintain consistency throughout the Army and to alleviate the burden of data entry into the CTC database. Installations will be requested, through their MACOM, to provide information to support the centralized effort.

## **5.9 DEFENSE SITE ENVIRONMENTAL RESTORATION TRACKING SYSTEM**

The Defense Site Environmental Restoration Tracking System (DSERTS) is a Windows-based personal computer program, and is used for collecting and reporting data during the environmental restoration process at IRP and BRAC sites. The DSERTS is the principal source of information used by DoD to provide program status for the Defense Environmental Cleanup Program Annual Report to Congress. The Army uses the DSERTS data to develop and defend Program Objective Memorandums (POMs) and the President's Budget; manage and report restoration progress via the DoD In-Process Reviews (IPRs) and Measures of Merit (MOM); track sites addressed in the IAP/BCP; input to the RRSE information; and to support site CTC estimates.

To be considered for IRP or BRAC funding a site must be in the DSERTS. Installations are responsible for reviewing and updating the appropriate DSERTS information in the spring and fall. Installations submit DSERTS to MACOMs, where the MACOM submits a consolidated DSERTS report to USAEC. USAEC reviews DSERTS to ensure completeness and consistency with guidance.

New sites must be recorded in DSERTS prior to being considered for funding. See Section 6.3.3.3 for more information on new sites.

The DSERTS has three primary sections which require review and updates; Installation Information, Site Information, and BRAC Information. These data are entered at the installation level.

### **5.9.1 Installation Information**

Information pertaining to the installation is entered under the following categories.

- Operable Unit
- Record of Decision/Decision Document
- Interagency Agreement
- A-106 Projects
- Documentation
- Installation Information
- Cleanup
- NPL Status
- RAB Information
- Active Transfers
- Penalties

### **5.9.2 Site Information**

The section on Site Information is grouped into several categories:

- General site information - includes: site name and description; site type; NPL status and HRS score; regulatory statute; legal agreement; program (IRP or BRAC round); phase status and dates; and remedial actions.
- Relative Risk Site Evaluation - is calculated based on inputted information about a site regarding type of contaminant, maximum contaminant concentrations, pathways of contamination, and the likelihood of receptors.

### **5.9.3 BRAC Information**

Each installation is required to input the historical BRAC information into the DSERTS system as well as keep the data current. The BRAC data elements are collected under the BRAC menu of DSERTS with the exception of the Environmental Baseline Survey (EBS) report information. The EBS report information is included under the Documentation section of the Installation menu. General information that must be entered for applicable sites under the BRAC menu include: the round in which the site was placed on BRAC; BRAC type (closure or realignment) and scheduling date(s); historical information on property transfers and leases (FOST and FOGL); and redevelopment interest.

#### 5.9.4 Reports

The information compiled under the categories described above allows the user to generate numerous queries of data maintained in DSERTS. As a result, the types of reports which can be printed include:

- Phase Summary
- Site Data
- Site Summary Chart
- Site Type Analysis
- Interagency Agreements
- Record of Decision/Decision Document
- Site Documentation
- Operable Units
- A-106
- Site Transfers
- Installation Cleanup
- BRAC Data
- BRAC Summary
- FOSL Data
- FOSL Summary
- FOST Data
- FOST Summary
- Redevelopment
- RAB
- Funding
- Relative Risk
  - Risk Status
  - Risk Factor Scored
  - Risk Media
  - Risk Project Exclusion
  - Risk Site Exclusion
  - Risk Category
  - Risk Category Summary
  - Risk Installation Action Plan
  - Relative Risk Date
  - Risk Comparison
- Data File Comparison

### 5.9.5 Review and Update

Installations are responsible for reviewing and updating the appropriate DSERTS information on a biannual basis. This information is submitted to the installation's MACOM and then to USAEC for review to ensure completeness and consistency with the proper guidance. DENIX is the preferred method for transferring the data. A copy of the DSERTS software and the associated users manual can be obtained from the USAEC Environmental Data Management Support Center.

## 5.10 RELATIVE RISK SITE EVALUATION

The RRSE is a methodology used to evaluate the relative risk posed by a site in relation to other sites when applicable. RRSE will be used at all active Army installations and BRAC restoration sites, with the exception of BRAC compliance sites. The Relative Risk Site Evaluation Primer (DUSDE(ES), 1997) and the Relative Risk Site Evaluation Quality Assurance Plan (DUSDE(ES), 1997) are references which provide instructions on how to perform these site evaluations.

The RRSE uses common standards and rating definitions for all military Services to ensure uniform categorization DoD-wide and ensure restoration work across DoD is generally sequenced first at sites that pose the greatest risk to human health and the environment. The RRSE is **not** a substitute for a baseline risk assessment or health assessment, which is more comprehensive in scope, nor is RRSE a means to place sites into a "No Further Action" category.

The RRSE groups sites into high, medium, and low categories based on the evaluation of gathered site information. RRSE helps to determine the general sequence in which DoD sites will be addressed and helps to establish their funding priority. The RRSE scoring and results should be discussed with Federal, state, and local authorities as well as stakeholders and factored into all priority setting decisions. Restoration Advisory Boards are an excellent forum for obtaining stakeholder input.

### 5.10.1 RRSE Framework

The RRSE framework is based on information fundamental to risk assessment. Recent site information such as sampling data are used to evaluate human health and ecological exposures to various environmental pathways; these are, ground water, surface water, sediments, and surface soils. At sites with soil contamination the inhalation of volatiles and contaminated particles are also considered.

RRSE is an easy to understand qualitative methodology for evaluating relative risks and is designed to handle a broad range of sites as well as a broad range of data that can exist at DoD installations. Relative risk is not the sole factor in determining the sequence of environmental restoration work, but it is an important consideration in the priority setting process.

### 5.10.2 Requirements

RRSEs are required for all sites with on-going IRP activities and should be performed with available site data. Using the RRSE module in DSERTS, installations evaluate each DSERTS site which requires further work. Installations should review and update RRSE data each spring and fall as part of the budget data submission process. DoD uses RRSE to track the Army's progress in site cleanup, therefore updates are important, especially for those sites where remediation has taken place.

RRSEs evaluations are not required at sites that are categorized as either "Response Complete" or "Remedy in Place." Response Complete sites are sites where no further action is required. A Remedy in Place determination requires that all remedial action construction is complete and remedial action operation is underway for a site.

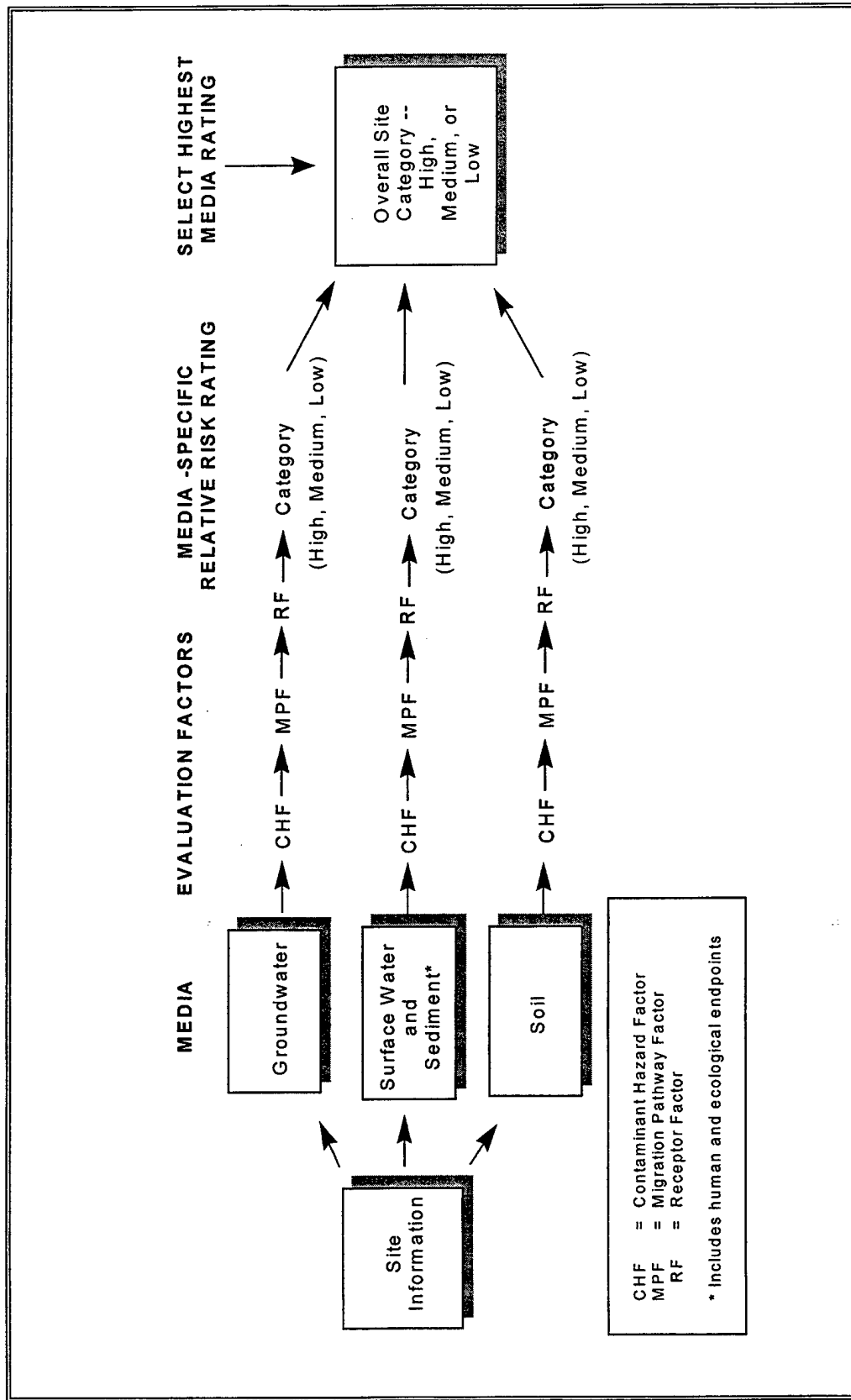
RRSEs should not be performed at sites without sufficient and reliable concentration data. Sites lacking data should be given a "Not Evaluated" designation, although all Army sites were required to be evaluated in FY97. Action on these sites may be deferred. Finally, RRSEs are not to be performed on PRP sites, building demolition/debris removal sites, and sites comprised solely of abandoned ordnance. A separate risk procedure known as OEW Site Risk Mitigation Prioritization is used for sites comprised of abandoned ordnance.

### 5.10.3 RRSE Scoring

Each environmental medium is evaluated using what are known as the Contaminant Hazard Factor (CHF) (relationship of contaminants to comparison values), Migration Pathway Factor (MPF) (likelihood/extent of contaminant migration), and Receptor Factor (RF) (likelihood of receptor exposure to contamination). Each of these factors is given a rating (e.g., Significant, Moderate, or Minimal for CHF) based on recent and representative site information from existing restoration documents or databases to complete the module. Examples of sources of contamination data include completed SIs, RIs, FSSs, and other similar types of information. For each environmental medium at a site, the CHF, MPF, and RF are combined to obtain the relative risk (High, Medium, or Low) for that medium. The highest RRSE result for a medium determines the relative risk designation for the site. This site specific process is illustrated schematically in Figure 5-1. Where sufficient data are available, all four environmental media are evaluated. However, a site can be evaluated for relative risk, even if data are available on only one medium.

The Relative Risk Site Evaluation Worksheet requires a brief rationale for the selected MPF and RF. It is important that the rationale provided actually support the selected factor.





**Figure 5-1. Flow Diagram of the Relative Risk Site Evaluation Framework**

#### **5.10.4 RRSE Quality Assurance Plan**

A formal RRSE Quality Assurance (QA) Plan has been developed and implemented in an effort to maintain both inter-service and intra-service data consistency and program credibility. The goal of RRSE QA is to provide assurance that evaluations are being performed throughout DoD in accordance with the procedures and requirements established in the RRSE Primer. RRSE QA objectives include:

- Consistency – among DoD Services' data collection, application of the Primer, and use of the data.
- Auditability – to reasonably and readily examine and verify RRSE data.
- Accountability – for the RRSE process, from RPM to ODEP to ODUSD(ES), to include the documentation and reproducibility of the data. This includes maintaining the integrity of the process.
- Credibility – confidence of both internal and external stakeholders.

The Relative Risk Site Evaluation Quality Assurance Plan (ODUSD(ES), Summer 1997) provides additional and more specific information on RRSE QA Plan roles, responsibilities, data verification, reporting, and QA management.

#### **5.11 ANNUAL REPORT TO CONGRESS**

The DoD submits an annual Defense Environmental Restoration Program Report to Congress that describes DERP accomplishments during the previous fiscal year. The report is required by Section 120(e) of CERCLA, which applies to all Federal facilities, and Section 211 of the CERCLA which pertains to the DERP. The report includes, but is not limited to the following items:

- Success stories highlighting significant DERP and BRAC project activities to clean up sites and reduce risk to human health and the environment.
- DERP and BRAC program accomplishments and initiatives.
- Narrative summary for NPL, Proposed NPL, and major BRAC installations.
- Data tables with installation cleanup status.

The USAEC is responsible for coordinating the Army's input to the Annual Report. Preparation of the report occurs in the first and second quarter of each fiscal year, with submittal to Congress and distribution to States and the public at the end of the second quarter.

The major source of information to the Annual Report is the DSERTS. It is important that installations update their DSERTS data on a regular basis and maintain accurate records of DERP activities in order to respond to requests for information.

## **5.12 PROPERTY TRANSFER AND LEASE**

Although Army regulations have provided for the sale and transfer of excess Army property, it was not until the passage of Public Law 100-526, the BRAC Act of 1988, that transfer of Army property became an Army priority. With the passage of subsequent BRAC laws and the Community Environmental Response Facilitation Act (CERFA) in October 1992, the DoD and the Army have placed more emphasis on the expeditious identification, cleanup, and transfer or lease of excess Federal property.

Under CERCLA Section 120(h), and 40 CFR 373, Reporting Hazardous Substance Activity When Selling or Transferring Federal Real Property, the Army remains liable for environmental cleanup on real property it transfers, even when the contamination was discovered subsequent to transfer. To protect the Army from disagreements as to the source of contamination subsequently discovered, the Army has established protocols to assess the condition of property prior to transfer.

DoD guidance and the passage of the CERFA have required changes in Army protocols for property transfer. Protocols to effect lease of Army property have similarly been revised. However, the DoD guidance on property transfer and lease continues to evolve.

For real property transactions, results of the Environmental Baseline Survey (EBS) evaluation will be documented in a Finding of Suitability to Transfer (FOST) for sales divesting title, or a Finding of Suitability to Lease (FOSL) for leases. FOSTs and FOSLs are not required for acquisitions. An Environmental Condition of Property (ECOP) is required for transfers of jurisdiction between Federal agencies. EBSs, FOSTs, FOSLs, and ECOPs shall be completed in accordance with DA PAM 200-1 and will follow the procedures found in AR 405-10 (concerning acquisition), AR 405-80 (Outgrants), and AR 405-90 (Disposals).

The FOST or FOSL are documents that presents the environmental condition of the property and associated land/use restrictions, covenants, and warranties required by law, regulation, or guidance to ensure the public, regulators, and DoD that the property is suitable for transfer or lease. Specifically, the FOST or FOSL are disclosure documents to inform people so as to limit future risk and liability. The FOST or FOSL is used by the real estate community to place stated restrictions, notice, covenants, and access clauses into a deed, contract, or Memorandum of Agreement/Memorandum of Understanding (MOA/MOU). The FOST and FOSL process develops restriction necessary to safeguard human health and the environment, and to ensure the effectiveness of future cleanup activities and remedies.

With the emphasis on early transfer of property, a document referred to as a Finding of Suitability to Early Transfer (FOSET) has been established. The FOSET is primarily used where the property to be transferred is contaminated.

### **5.12.1 Environmental Baseline Survey**

An EBS is a study of the environmental conditions of Army controlled properties and proposed acquisitions, focusing on hazardous substances or other regulated hazards. The EBS is used to determine if hazardous substances stored for one year or more, were released into the environment or structures, or disposed of on the property selected for transfer. The EBS is also used to determine whether a threat or hazard to human health or the environment is present, such as the presence of polychlorinated biphenyls (PCBs), petroleum products and their derivatives, asbestos, radon, lead-based paint, and unexploded ordnance (UXO).

An EBS is prepared on all property which is planned for outgranting, transferring, or where the Army will acquire real property. Procedures for conducting an EBS and the review process, are described in AR 200-1 and DA PAM 200-1, Chapter 15. The EBS procedures include, at a minimum, a detailed record search of the property and adjacent properties past and current operations, analysis of aerial photos, interview with current and former employees, visual inspections, identification of sources of contamination, and review of on-going or past response actions. The review process in selecting a course of action, takes into consideration technical feasibility, economic acceptability, and environmental effects.

The course of action following the EBS could include:

- Conduct no further action.
- Conduct actions resulting in restrictions of use.
- Conduct remedial actions resulting in no restrictions on use when economically and technically feasible and when the recipient will accept the property only in an unrestricted use condition.
- In all cases, at a minimum, the Army will conduct actions to a level necessary to protect human health, safety, and the environment.

The site-wide EBS is used as a multi-functional document providing required environmental data to identify CERFA parcels and to support NEPA actions. Using the EBS to support NEPA precludes the need to develop Preliminary Assessment Screening documents.

### **5.12.2 Finding of Suitability to Transfer**

After completion of the EBS, an analysis on intended use, and an evaluation of the local community reuse plan (if available), a FOST is prepared. The Army will sign a FOST once the determination is made that the property is suitable for transfer by deed for the intended purpose.

Regulatory agencies will be notified at the initiation of the EBS and the FOST. The process of EBS and FOST development will ensure regulators are provided an opportunity to express their views. Regulators will be provided draft EBSs and FOSTs. The public will be notified of the intent to sign the FOST and the regulators will be formally notified of the intent by letter.

There are two types of FOSTs:

- Property where no release or disposal has occurred, or
- Property where release or disposal has occurred.

The environmental review process for both FOSTs are the same except for the conditions which are required in the FOST and transfer deed to meet the requirements of CERCLA.

#### **5.12.2.1 Property with No Release or Disposal**

In the case of no contamination, the FOST will be signed once the determination has been made that the property is suitable for transfer by deed because no hazardous substances or petroleum products were known to be released or disposed of on the property.

#### **5.12.2.2 Property with Release or Disposal**

In the case of real property owned by the Army on which any hazardous substance was stored for one year or more, known to have had a release or disposal has occurred, each deed entered into transfer of the property of the United States to any other person must contain:

- Identification of the type and quantity of hazardous material, to the extent that information is available; the time that the storage, release or disposal took place; and description of the remedial action taken, if any.
- Covenant warning that all remedial action necessary to protect human health and the environment has taken place, the remedial action is in the process of taking place, or the remedial action will take place in the future.
- Clause granting the United States Government access to the property if future remedial action is necessary.
- Listing of specified recommended restrictions on the use of the property, if any, to protect human health, safety, and the environment or the environmental restoration process. For remediated parcels such restrictions would include those documented in the ROD or DD.

#### **5.12.2.3 Approvals**

At active and BRAC installations, signature authority for all FOSTs have been delegated to the MACOMs.

### **5.12.3 Finding of Suitability to Lease**

The FOSL process is almost identical to the FOST process.

At active and BRAC installations, signature authority for all FOSTs have been delegated to the MACOMs.

For BRAC installations, notification to the USEPA and State regulators is required prior to entering into any lease that will encumber the property beyond the date of termination of Army operations.

Upon termination of the lease the Army and the lessee will jointly conduct a final EBS in order to determine if there are any changes to the environmental condition of the property. In the case of lease renewal, the Army must determine if there are any changes in the use or environmental conditions on the subject property from those originally documented in the EBS.

### **5.12.4 Environmental Condition of Property**

An ECOP is required when the Army is transferring property to another federal agency. The environmental condition of the property is documented in an ECOP, which is similar to a FOST, except for the following:

- Regulatory participation/review should parallel DoD FOSL Guidance which does not require mandatory review.
- All ECOPs are signed by the MACOM.
- CERCLA covenant and warrantee are not required.
- Transfer prior to all cleanup being completed is allowed.
- Responsibility for environmental cleanup and compliance requirements can and should be negotiated with the federal agency acquiring the property.

## **5.13 CLEANUP RESPONSIBILITIES AFTER PROPERTY TRANSFER**

DoD policy outlines the circumstances under which the Army would perform additional cleanup of Army property that was transferred by deed to any entity outside of DoD. DoD policy requires the integration of the land use planning and environmental restoration process and coordination with the local community.

The Army disposal agent will ensure that the property transfer documents reflect use restrictions and enforcement mechanisms specified in the remedy decision document. The Army disposal agent will ensure that Institutional Controls are in place prior to the transfer of the property or will be put in place by the transferee, and will ensure that the Institutional Controls are being followed, and attempt to ensure that appropriate actions are taken to enforce deed restrictions.

DoD will reserve the right to take appropriate cleanup actions to protect human health and the environment due to action or inaction of any future land owner, and seek to recover costs of the cleanup under the terms of the transfer document.

After the property transfer, the Army will conduct additional cleanup under the following conditions:

- The selected remedy fails and is no longer protective of human health and the environment.
- Institutional Controls are proven ineffective.
- Additional contamination is found that is attributable to DoD activities.
- Regulatory requirements are revised to reflect new scientific/health data establishing the remedy in effect to be ineffective.

After the property transfer, the Army will not conduct additional cleanup when the additional cleanup facilitates a land use prohibited by deed restrictions or other appropriate Institutional Controls.

The Army will initiate actions to revise deed restrictions or other Institutional Controls as appropriate when the remedy has achieved cleanup level and restrictions are no longer required. The Army will cooperate with the transferee to revise and remove restrictions to facilitate a broader range of land uses when the transferee undertakes and pays for efforts required which fully demonstrate the continuance of protection of human health and the environment. The transferee must apply to the Army disposal agent for revision or removal of deed restrictions.

The Army will disclose to the community or LRA the Army's intent to consider land use expectations in the remedy selection process. Public notifications ordinarily made throughout the restoration process will also include full disclosure of the assumed land use used in the remedy selection process.

#### **5.14 ENVIRONMENTAL PROGRAM REQUIREMENTS (EPR) REPORT**

The EPR Report tracks environmental requirements in all environmental program areas and in all appropriations at the project level.

These reports are to be submitted annually by all active Army installations to MACOMs, which in turn, submit the reports to USAEC.

The EPR is organized into several interrelated components which are identical to the components of the Army's environmental program. These are:

- Foundation - Management and leadership to oversee activities and to address issues in all four program pillar areas.

- Compliance Pillar - Ensuring that installations achieve and maintain compliance with all Federal, state, and local laws and regulations; as well as, address control measures under major permit programs.
- Conservation Pillar - Compliance with laws and regulations affecting natural and cultural resources.
- Pollution Prevention Pillar - Using prevention approaches as the preferred method to achieve and maintain compliance with environmental regulations.
- Cleanup Pillar - Compliance with CERCLA, SARA, IRP, BRAC cleanup requirements, RCRA corrective action (funded by ER,A), and FUDS. Actions taken to identify contaminated sites, assess risk, and cleanup hazardous wastes from previous Army activities.

EPR reports for the IRP are generated by DSERTS and use CTC data, and **are not** submitted by installations to USAEC.

For more information on EPR reports as they relate to the pillars other than cleanup, see Policy and Guidance for Identifying U.S. Army Environmental Program Requirements (ODEP, 1997).



## **CHAPTER 6: RESTORATION PROGRAM MANAGEMENT**

The Installation Commander and his/her staff should have direct involvement in the planning, budgeting, and funding processes of the environmental restoration program at their installation. This Guidance Manual provides general programming and budgeting requirements. It does not provide specific dates for report and document submittals, since these may undergo changes annually. Specific submittal suspenses and guidance will be provided in the data call letter or in the IRP/BRAC ERP Management Plans distributed by USAEC.

### **6.1 PLANNING AND PROGRAMMING**

Congress and the DUSD(ES) require the Services to manage and report on both their IRP and BRAC ERP at the site level. This requirement includes the collection and tracking of technical and financial information, by site, through completion of the restoration activities.

To ensure consistency in the manner ER,A is prioritized and funded, several documents and reports play key roles in the process. The Installation Action Plan (IAP), Defense Site Environmental Restoration Tracking System (DSERTS), Cost-to-Complete (CTC), and the Relative Risk Site Evaluation (RRSE) are all inter-related, require input from one another, and, in turn, provide output to each other. The Base Closure Account (BCA), likewise depends on the same documents and reports, with the BRAC Cleanup Plan (BCP) and the BCP Abstract substituting for the IAP. Each must be internally coordinated to ensure overall consistency within the installation environmental restoration program. The role that these documents and reports play in the planning, budgeting, and funding is outlined in this chapter.

#### **6.1.1 Installation Action Plan**

To assist in meeting an installation's IRP requirements, an IAP must be prepared. The IAP outlines the total multi-year integrated, coordinated approach to achieving an installation's restoration goals. The plan is used by the USAEC, MACOMs/Major Subordinate Commands (MSCs), and installations to monitor requirements, schedules, and budgets. Installations are encouraged to share IAPs with all stakeholders.

IAPs are updated and submitted through the MACOMs to the USAEC in the spring of each year. If the USAEC does not receive plans from the MACOMs for each installation with ongoing or future IRP requirements, the amount of the delinquent installation's total IRP requirements for the next fiscal year will not be included in the MACOMs total requirements.

See Section 5.7.1 for more information on the IAP.

### **6.1.2 BRAC Cleanup Plan (BCP) and BCP Abstract**

To assist in meeting an installation's BRAC requirements, a BRAC Cleanup Plan (BCP) and a BCP Abstract are prepared. A BCP is required at each closing or realigning installation where a BRAC Cleanup Team (BCT) has been established.

Army guidance requires BCP Abstracts be prepared for all BCT installations and BRAC 95 installations operating under a modified Fast Track Program, semiannually in the spring and fall. The fall BCP Abstract is submitted annually to DoD and is used to support DoD's data call, In-Process Review, and Report to Congress. The spring submittal supports the DoD In-Process Review.

See Section 5.7.2 for more information on the BCP and BCP Abstract.

### **6.1.3 Defense Site Environmental Restoration Tracking System (DSERTS)**

The DSERTS is a Windows-based personal computer program used for collecting and reporting site level data during the environmental restoration process at IRP and BRAC sites. The Army uses the DSERTS data to develop and defend Program Objective Memorandums (POMs) and the President's budget, manage and report restoration progress with the DoD In-Process Reviews and Measures of Merit, report RRSE information, and support the CTC. DSERTS is the principal source of information used to provide program status for the Defense Environmental Cleanup Program Annual Report to Congress.

In order to be considered for ER, A or BCA funding a site must be in the DSERTS and new sites must be recorded in DSERTS prior to being considered for funding. (See Section 6.3.3.3 for more details on new sites.) Installations are responsible for reviewing and updating the appropriate DSERTS information on a semi-annual basis, in the spring and fall.

See Section 5.9 for more information on DSERTS.

### **6.1.4 Cost-to-Complete (CTC)**

DoD requires that all services develop, and update annually, a comprehensive estimate, by site, of the total cost for completing all environmental cleanup under the IRP/BRAC ERP. The Army effort, referred to as the Cost-to-Complete Study and Analysis, has been completed for all Army installations in DSERTS with restoration requirements.

Each DSERTS site with any future planned restoration activity must include estimates of CTC. The CTC estimates along with RRSEs are the basis of the Army IRP budget. For BRAC, CTC estimates along with reuse are the basis for the Army BRAC ERP budget.

After the CTC database is updated, the cost estimates are constrained to the fiscal budgetary guidance provided to the MACOMs by USAEC. Constraining the CTC estimates is a budget planning requirement that allows installations to plan over time for specific technology, procedures, or resources within a specified level of restoration funds.

Constraining the CTC to fiscal guidance provides installations a more realistic picture of the amount of work they can expect to accomplish over the next several years.

To build the budget, site-level CTC data is provided in late spring.

See Section 5.8 for more information on the CTC.

### **6.1.5 Relative Risk Site Evaluation (RRSE)**

The DUSD(ES) requires each Service perform RRSEs for all sites at active military installations, BRAC installations, and FUDS properties that have future funding requirements and are not classified as (1) response in place, (2) response complete, (3) lacking sufficient information, or (4) abandoned ordnance.

Each service then prioritizes its environmental restoration program with the assistance of the RRSE scores.

The RRSE methodology evaluates the “relative risk” posed by a particular site in relation to other DoD sites and groups sites into high, medium, and low categories based on the evaluation of gathered site information. A RRSE assists in the determination of the sequence in which Army sites will be addressed.

The Army uses the RRSE scores to sequence funding requirements and develop the budget for the IRP. The budget for BRAC ERP is primarily based on property reuse considerations with RRSE scores being a secondary budgetary consideration.

See Section 5.10 for more information on the RRSEs.

## **6.2 BUDGET PREPARATION**

The IRP and BRAC ERP budgets are built by DSERTS project site in accordance with the Defense Planning Guidance (DPG) and are based on the Army’s CTC estimates, RRSEs, and reuse. The DPG requires that the IRP address sites in RRSE categories within a given timeframe. For the BRAC ERP, the DPG requires that cleanup occurs within a given timeframe based on reuse. The USAEC builds the budget by consolidating MACOM identified requirements. The major budget building efforts occur in the spring/summer. Therefore, the spring submissions of affiliated reports and documents as identified in Section 6.1 are most critical.

### **6.2.1 IRP Budget Categories**

The Army’s restoration budget is apportioned into 5 categories:

- Program Management - includes salaries, travel, supplies, MACOM program management costs, TJAG support, RAB administrative costs, Technical Assistance for Public Participation Program costs, Technical Review Committee administrative costs, costs for PA/SIs for installations on the Federal Agency Hazardous Waste Docket, and any other mission-funded costs. Program management is not to exceed 10% of the total ER,A budget.
- Projects - includes costs, tracked by site, to execute remedial responses such as studies, removals, interim and final remedial actions, and long-term operation and monitoring. Contract supervision and administration (S&A) costs (both prior and current year), in-house support, and any costs associated with execution of IRP activities tracked by site are also project costs. At least 90% of each MACOMs' project funds must be committed to "high" relative risk sites. At the MACOM discretion, 10% of project funds can be used for lower relative risk category sites.
- HQDA Project Set Asides - includes those projects that have been negotiated by HQDA (e.g., Rocky Mountain Arsenal, Massachusetts Military Reservation, etc.).
- Defense and State Memorandum of Agreement/Cooperative Agreement (DSMOA/CA) - involves state governments in the environmental restoration of DoD installations, to include the IRP. The U.S. Army Corps of Engineers executes the DSMOA/CA program and reports on the status of the DSMOA/CA program at the DoD In-Process Reviews. The Army provides ER,A funds to HQUSACE for state proposed DSMOA/CA budgets. Installations with issues related to state environmental regulatory support should forward issues through the MACOM to the ACSIM. See Section 4.2.5 for more details on DSMOA/CA.
- Agency for Toxic Substances and Disease Registry (ATSDR) - under CERCLA, ATSDR is required to conduct "Health Assessments and other Health Related Activities" for sites listed or proposed for the NPL. USACHPPM is the Army's liaison with ATSDR and reports on the status of the ATSDR program at the DoD In-Process Reviews. USACHPPM provides USAEC with an Annual Plan of Work for ATSDR at Army installations. USAEC reviews the proposed ATSDR budget for consistency with the approved IRP Obligation Plan and eligibility for reimbursement. USACHPPM provides MACOMs and installations with a schedule for site visits.

## 6.2.2 BRAC ERP Budget Categories

The Army's BRAC ERP budget is apportioned into 6 categories:

- Cleanup Projects - include costs, tracked by site, to execute remedial responses such as studies, removals, interim and final remedial actions, and long-term monitoring resulting from past DoD activities. Restoration activities at BRAC installations are the same as those defined in the IRP. BD/DR may be eligible in situations where demolition of parts or all of a building can be paid for by BRAC in order to promote effective/required cleanup and property transfer. Contract S&A costs (both prior and current year), in-house support, and any costs associated with execution of cleanup activities, tracked by site, are also project costs.

- Compliance - includes closure related compliance activities which are generally related to projects associated with facilities and buildings requiring cleanup and abatement, closure of TSD or other permitted facilities, conduct of radon surveys, abatement of asbestos and lead paint, UXO clearance, and removal of USTs necessary to support the transfer of the property.
- Administration - includes salaries, travel, supplies, program management costs, TJAG support, RAB administrative costs, Technical Assistance for Public Participation Program costs, Technical Review Committee administrative costs, and any other mission-funded costs. Administration is not to exceed 10% of the total BRAC ERP budget.
- DSMOA/CA - involves state governments in the environmental restoration of DoD installations, to include BRAC. The U.S. Army Corps of Engineers executes the DSMOA/CA program and reports on the status of the DSMOA/CA program at the DoD In-Process Reviews. The Army provides BCA funds to HQUSACE for state proposed DSMOA/CA budgets. Installations with issues related to state environmental regulatory support should forward issues through the MACOM to the ACSIM. See Section 4.2.5 for more details on DSMOA/CA.
- ATSDR - under CERCLA, ATSDR is required to conduct "Health Assessments and other Health Related Activities" for sites listed or proposed for the NPL. USACHPPM is the Army's liaison with ATSDR and reports on the status of the ATSDR program at the DoD In-Process Reviews. USACHPPM provides USAEC with an Annual Plan of Work for ATSDR at Army installations. USAEC reviews the proposed ATSDR budget for consistency with the approved BRAC Work Plan and eligibility for reimbursement. USACHPPM provides MACOMs and installations with a schedule for site visits.
- USEPA salaries in support of BRAC Cleanup Teams are part of BRAC ERP budget in addition to DSMOA/ATSDR.

### **6.2.3 MACOM Requirements for IRP**

The MACOMs constrain their CTC in the January/February time frame. The FY+1 requirements are used to determine the IRP allocations for each MACOM for the next FY. After the MACOMs submit their IAPs and DSERTS, USAEC notifies the MACOMs of their preliminary Annual Funding Plan (AFP). A preliminary FY+1 MACOM Obligation Plan is then due to USAEC for development of the POM. USAEC determines the final MACOM AFP and these allocations are identified to the MACOM and the Army Budget Office (ABO) as the MACOM AFP for the IRP. The final FY+1 MACOM Obligation Plan is due to USAEC in the fall.

MACOMs report current obligation by installation, site, phase, and quarter, by updating the final FY+1 Obligation Plan throughout the FY. The updated obligation reports are due to USAEC quarterly. During the year, at the Program Execution Reviews, the MACOMs brief the USAEC on its progress towards obligation of their AFP, explaining any discrepancies. Deviations in funding levels per site are to be updated for the Program Execution Reviews.

Quarterly Obligation Plan updates are to be reconciled with the Defense Financial Accounting System (DFAS) and the Corps of Engineers Project Accounting Reports (PEAR). Installation or executor resource managers input installation and phase level obligation information to the DFAS using Army Management Structure (AMS) codes identified in the DFAS-IN Manual 37-100-XX (FY).

#### **6.2.4 MACOM Requirements for BRAC ERP**

The MACOM responsibilities for BRAC ERP funding are:

- MACOMs will use CTC estimates to identify BRAC environmental restoration requirements.
- MACOMs will ensure that all environmental restoration requirements (also NEPA and cultural and natural resources for BRAC 95 identified for their installations) are provided to USAEC for inclusion in the BRAC Work Plan.
- USACE Districts are responsible for coordination with the implementing MACOMs and installations, regarding all projects they are executing for the installation/MACOM. Also, Districts are responsible for providing cost estimates for their projects and providing dates when funds are required and a planned project award date.

### **6.3 FUNDING**

#### **6.3.1 IRP**

USAEC is the designated Army program manager for the IRP. MACOMs annually submit a memorandum to USAEC for distribution of their AFP. The USAEC, through the ACSIM, coordinates with the ABO to issue Funding Authorization Documents (FADs) and advise MACOM resource management of the planned distribution. USAEC will perform a mid-year review of execution, recommend adjustments as necessary, and notify MACOMs and ABO of the revised distribution.

#### **6.3.2 BRAC**

Congressional legislation directs that BRAC environmental restoration requirements be funded with BRAC 93, BRAC 95 or other subsequent BRAC accounts, as appropriate.

BRAC program requirements are identified in the President's budget. After Congressional approval of the DoD appropriation which funds this program, funds are released to the Army. BRACO receives the funding and directs ABO to distribute the funding for program execution. Funds are distributed to the project executors, either USACE districts or installations. Funds are provided for both program management and project execution. BRAC funds request should be submitted to BRACO through the automated funds release system.

BCA Package Identification Codes are used, as identified in DFAS IN Manual 37-100-XX (FY). BCA funds are available for obligation for a six year period. Separate accounts are established for each subsequent BRAC program.

### **6.3.3 Special Funding Issues**

#### **6.3.3.1 The Military Construction, Army (MCA) Appropriation**

The Military Construction, Army (MCA) appropriation is used for major construction projects. These projects must be submitted on a DD Form 1391 and are approved individually by Congress. MCA projects require substantial lead-time. Environmental projects identified for MCA funding must also be entered into the DD Form 1391 database.

MACOMs will ensure that subordinate installations perform Work Classification remedial action projects in accordance with the U.S. Army Engineering and Housing Support Center Work Classification for DERP (Note Number 420-10-2, dated 2 Apr 90). The installation Environmental Office and the Directorate of Engineering and Housing, or Director of Public Works in conjunction with the Executing Agency, will ensure that proper Work Classification has taken place. If a restoration project is classified as Military Construction (MILCON), the project should be programmed and budgeted for in the normal MCA account. In those cases where the time required for normal MCA procedures will result in a substantial danger to public health and welfare or the environment, the project may be proposed for ER,A funding. DoD must approve all requests for ER,A MCA funding. Normally, ER,A MCA will not be considered for out-year requests.

#### **6.3.3.2 Reimbursement for Non-Army Activities**

While highly discouraged, an IAG/FFA may include language that the Army will reimburse other Federal agencies (outside of the Army) for services associated with cleanup. These services must be those that the Army does not have the capability of providing and are incidental to cleanup.

The outside agency, to be reimbursed, submits a proposed annual budget to the installation prior to development of the upcoming fiscal year budget. The proposed annual budget is categorized into tasks developed in accordance with the scope of work contained in the agreement. Subsequently, the Army only reimburses the outside agency for those specifically approved tasks.

All requests for reimbursement of services to Federal agencies outside the Army are processed in accordance with the Economy Act (31 USC 1538). The Army certifies that use of funds is legal under the Economy Act. The Army approves and reimburses only those costs that directly support the Army's environmental mission and are not part of the supporting agency's Congressional funded mission. Installations and MACOMs should contact their resource management and legal offices with any questions concerning the Economy Act and reimbursement of services provided by agencies outside the Army.

### **6.3.3.3 New IRP Sites**

The Army provides IRP funds for sites in DSERTS and for PAs required by the Federal Agency Hazardous Waste Compliance Docket or "Docket." MACOMs may fund a PA for installations on the Docket with program management funds. IRP funds are not available for PAs at installations not on the Docket nor for relative risk data collection for sites not in DSERTS. New sites can receive funds only after being added to DSERTS, after an assessment is finalized, and the relative risk category has been determined.

New sites are added to the DSERTS if the sites are identified in a PA conducted for the installation listed on the Docket. New sites are input to DSERTS when the PA phase status is completed as either "Response Complete" or with follow-on action. New sites with follow-on action can only be added to DSERTS after the RRSE category has been determined. Sites with a PA phase status of "Underway" or "Future" cannot be input to DSERTS.

### **6.3.3.4 Public Involvement Funding**

Public involvement activities related to restoration activities, such as the Community Relations Plans (CRP) and CRP implementation, public meetings, and fact sheets may be funded through the ER,A or the BCA. Public involvement requirements are project costs apportioned over all sites and must be identified in the ER,A Obligation Plan and BRAC Work Plan.

### **6.3.3.5 RAB/TRC Funding**

The costs associated with RAB/TRC administrative support are funded from either the ER,A or the BCA, whichever is appropriate. For active installations, the installation identifies RAB funding in the IRP obligation plan, while BRAC installations identify the funding in the BRAC Work Plan.

The RAB/TRC Administrative Funding includes those expenses which are directly related to the operation of the RAB/TRC such as: RAB/TRC establishment, member selection costs, orientation training, meeting announcements, meeting logistics, facilitators, preparation of meeting agendas and minutes, meeting material requirements, and document reproduction for RAB/TRC members. RAB/TRC Administrative Funding does not include salaries for DoD personnel or general community involvement expenses, such as preparing Community Relations Plans.

MACOMs budget RAB/TRC support costs from the MACOM allocation of ER,A or BCA environmental program management. MACOMs submit individual RAB Cost Worksheets when identifying program management costs for the upcoming fiscal year.

The Army uses DSERTS, BRAC Work Plans, and IRP Obligation Plans to track the status of RABs/TRCs. Also, RAB/TRC Administrative Funding is tracked using the DFAS RAB/TRC AMS codes.

See Section 4.3 and U.S. Army Restoration Advisory Board and Technical Assistance for Public Participation (USAEC, 1998) for more information on RABs and TRCs.



### **6.3.3.6 Technical Assistance for Public Participation (TAPP) Funding**

The TAPP program provides community members of RABs/TRCs with access to independent technical support through the use of government purchase orders.

When RABs/TRCs identify a need for technical assistance, the installation will program funds for TAPP support. TAPP should be identified on the RAB Cost Worksheet, BRAC Work Plan, or IRP Obligation Plan. An installation's TAPP program has an annual funding limit of the lesser of \$25,000 or 1% of the restoration cost to complete unless extenuating circumstances warrant a waiver of these limits. The funding limitations can only be waived by the DASA(ESOH) using the recommendations of the Installation Commander or other designated authority. The requiring activity through the Installation Co-Chair will provide the appropriate accounting with the purchase request when submitting the request to the contracts office. TAPP funding is tracked using the DFAS AMS codes.

The Installation Commander must be aware of the budgetary impacts of TAPP purchase orders. The Installation Co-Chair or KO should inform the Installation Commander of the government cost estimate of the proposed project so that he/she can determine whether sufficient ER, A or BCA funds exist to support the TAPP project.

See Section 7.5 for additional discussion on Simplified Acquisition Procedures. In addition, see Section 7.6 and U.S. Army Restoration Advisory Board and Technical Assistance for Public Participation (USAEC, 1998) for more information on TAPP contracting.

## **6.4 EXECUTION**

The Installation Commander is ultimately accountable for environmental restoration at the installation and, therefore, will assume responsibility for execution of the program. This policy provides the installation with the option of determining the performer(s) for executing restoration activities.

### **6.4.1 Execution Strategy**

DoD and the Army establish various goals for the IRP and BRAC ERP. This section reflects the recent goals; however, they are subject to change.

### **6.4.2 Obligation Goal**

The DoD goal for obligation of funds for both the IRP and BRAC ERP is 28% by first quarter, 55% by second quarter, 80% by third quarter, and 100% by fourth quarter. The Army's strategy is to exceed the DoD goal and have the majority (90%) of the program executed by the end of the third quarter. To meet this goal, MACOMs should ensure that no projects are planned for fourth quarter execution.

### **6.4.3 Defense Planning Guidance (DPG) IRP Goals**

The Army's execution strategy to meet the IRP goals of the DPG are to focus on "high" relative risk sites and to cleanup to a lower relative risk category or have remedial systems in place, for:

- 50 and 100 percent of all currently identified high relative risk sites by the end of FY02 and FY07, (or within three years for any newly identified high relative risk sites).
- Medium relative risk sites by FY11.
- Low relative risk sites by FY14.

At least 90% of each MACOMs AFP for the fiscal year must be committed to "high" relative risk sites. At the MACOMs' discretion, 10% of the AFP can be used for lower relative risk category sites.

### **6.4.4 DPG BRAC Goals**

The BRAC DPG Goals are:

- By 2001, 75% of the acres where release, disposal, or migration of hazardous substances has occurred will be suitable for transfer; 75% of BRAC installations will have remedial systems in place or responses completed; and 90% of all sites will have remedial systems in place or responses complete.
- By 2005, 100% of the acres where release, disposal, or migration of hazardous substances has occurred will be suitable for transfer; and 100% of BRAC installations will have all sites with remedial systems in place or responses complete.

### **6.4.5 Program Management Goal**

The Army's execution strategy is to limit program management funds to 10% of the IRP and BRAC ERP budget.

## **6.5 PROGRAM TRACKING AND REPORTING**

MACOMs will plan for obligation of funds to meet the Army's obligation goals. The MACOMs will ensure that funds are obligated only against sites and phases identified in the IRP Obligation Plan and BRAC Work Plan.

USAEC and BRACO will track execution of the IRP and BRAC ERP and compare reports through DFAS with the IRP Obligation Plan and BRAC Work Plan. USAEC and BRACO will perform a mid-year review and analysis of MACOM execution and notify the ABO of any adjustments to the MACOM AFP.

### **6.5.1 Fund Tracking**

Execution of the IRP and BRAC ERP must be tracked by installation personnel through close coordination between the project management and resource management staff.

Accounts are established in resource management offices that correspond with Army Management Structure (AMS) codes identified in DFAS-IN-37-100-XX(FY). Specific AMS codes are assigned for each phase of the IRP. For BRAC, specific AMS codes are assigned for each installation. Project management staff must establish with their resource management staff a mechanism whereby site level data can be tracked within either phases for the IRP or projects for BRAC ERP.

Information reported through DFAS is at phase level for IRP and project-level for BRAC ERP. On a monthly basis, site level data must be reconciled to the 218 Report for phase data or project data at the installation level. Discrepancies should be investigated and corrected so that subsequent 218 Reports are portraying an accurate execution picture.

On a quarterly basis, IRP obligation data (reconciled by installation to site and phase) is reported through MACOM channels to USAEC for a consolidated obligation reporting to the ACSIM. On a semi-annual basis, BRAC ERP obligation data (reconciled by installation to projects through the BRAC Work Plan) is reported to AEC and BRACO. It is imperative that the installation's site level data is reconciled by site to phase or project before submitting the information to the MACOM.

### **6.5.2 Funding Outlays**

Within the U.S. Government financial system, the term "Outlays" refers to the actual disbursement of funds, or more simply, the payment of a bill. For a given project, funds are "Authorized" to be used in the IRP Obligation Plan or BRAC Work Plan. The funds for that project are "Obligated" when an authorized agent of the government (e.g., Contracting Officer) signs (awards) a contract and commits the U.S. Government to pay a set amount for a prescribed work effort or product over a determined period of time. While "Authorized" project funds are subject to approved changes in the IRP Obligation Plan or BRAC Work Plan, "Obligated" funds must be reserved in their entirety to pay a bill that is owed by the U.S. Government.

In the case of the payment of government employee salaries or the purchase of materials or equipment, funds must be "Authorized" to pay the salary or purchase the equipment. When "Obligated" the work is performed or the contract for the purchase of the equipment is awarded, and the funds are reserved while the government pay check or contractor payment check is issued and cashed. When the government employee cashes his/her pay check or the vender cashes the government check, funds are disbursed and the "Outlay" has occurred. (Generally the funds are considered disbursed when the U.S. Government issues the check.)

When the U.S. Government awards a large, multi-year contract, the government does not pay the contractor until the work is actually performed. In the case of many environmental contracts the project may extend for two to three years or more. Normally the contract has provisions to

reimburse the contractor on a monthly basis for work that has been performed within the given month. The contractor submits a monthly Cost and Performance Report to report on the work effort and the amount of funds (labor costs, overhead, and material costs) that the contractor has expended during the month. When the KO and the COR verify that the work effort and costs are valid, the appropriate Disbursement Office “pays the bill” and the applicable portion of the “Obligated” funds are reported as “Outlays.”

Operations and Maintenance, Army (OMA) funds traditionally have been used to pay Army employees or contractors for on-going work. Thus, the one-year OMA funds are normally “Obligated” and disbursed or “Outlayed” in the year that the funds were appropriated. Any OMA funds not “outlayed” in the initial year have warranted close inspection, audits, and procedural reviews.

With the advent of environmental accounts using the ER,A funds in an OMA carrier, the financial accounting process has been challenged, since these type of OMA funds are often not disbursed for two to three years following “Obligation.” This delayed disbursement has resulted in an apparent credibility problem for the ER,A. Congress was told that it is imperative to provide funds in a given fiscal year to fund high priority, critical projects. Congress appropriates and “Authorizes” ER,A or BCA funds, the contracts are awarded and the funds are “Obligated,” but there are limited disbursements. The apparent credibility crises occurred when GAO questioned the rate at which Outlays were being processed and reported assuming that bona fide needs rule was not being adhered to in the programs. Congress sees limited “Outlays” for a year and incorrectly assumes that no work is being performed or the Army is forward funding workloads on these previously declared “critical” projects. This “outlay” problem is exacerbated due to potential of unobligated prior year funds to be “raided” when other high priority requirements (such as troop deployments) require immediate, but unbudgeted funding.

To ensure that all ER,A and BCA funds are disbursed in a timely fashion, the following goals have been established by DoD for Environmental Restoration funds:

	ANNUAL		CUMULATIVE
Initial year of Obligation	22%	22%	Disbursement of Funds
Second year of Obligation	45%	67%	Disbursement of Funds
Third year of Obligation	22%	89%	Disbursement of Funds
Fourth year of Obligation	6%	95%	Disbursement of Funds
Fifth year of Obligation	5%	100%	Disbursement of Funds

Because ER,A funds are executed using the OMA carrier, funds must be liquidated in five years. If liquidation does not occur within the five year period, bills presented for payment will have to utilize current price program dollars.

See Section 7.2.2.7 for a discussion on expediting the disbursement process.

### 6.5.3 Performance Measures

This section briefly describes the current performance measures used to track “success” in the Army Environmental Restoration Programs.

### **6.5.3.1 Program Execution Reviews**

The USAEC will hold quarterly meetings (semi-annually for BRAC) with the MACOMs to review execution and discuss issues. At these quarterly reviews, the MACOMs will brief USAEC (and BRACO for BRAC ERP) of its progress towards obligation of their AFP.

### **6.5.3.2 ACSIM IRP/BRAC Reviews**

The ACSIM requires quarterly reports on the execution and obligation of the IRP and BRAC ERP. MACOM briefing charts from the quarterly Program Execution Reviews will be presented as part of the ACSIM Quarterly Reviews. These reports are presented at the MACOM-level with detailed installation backup. Other reporting requirements include, but are not limited to DSERTS status, the annual Report to Congress, semi-annual budget execution reporting, annual reporting through the POM process, and the annual CTC report.

### **6.5.3.3 DoD In-Process Review**

DUSD(ES) requires that DoD components monitor program progress and report semi-annually in the spring and fall. The Army uses DSERTS data, RRSE data, budget data, BCP Abstracts, and CTC information to report restoration program status in support of the Army IRP and BRAC ERP.

### **6.5.3.4 The Defense Environmental Cleanup Program Annual Report to Congress**

The DoD is required to submit an annual report to Congress that describes the DERP (IRP and BRAC ERP) accomplishments during the previous FY. The report is required by SARA and applies to all Federal facilities. The report outlines progress made in carrying out environmental restoration activities at military installations. Included in the report are success stories highlighting significant DERP activities and initiatives; narrative summaries for NPL sites, proposed NPL sites and BRAC installations with BRAC Cleanup Teams; and the status of the cleanup at installations with sites in the DERP.

In the fall, installations and MACOMs are requested to submit success story candidates to USAEC. Installations and MACOMs are also requested to prepare or review narrative summaries.

The DSERTS is a critical source of information for the report. The DSERTS fall data submission is used for the report to Congress, therefore, installations and MACOMs should ensure that the DSERTS data is updated and submitted as required. Preparation of the report begins in September of each year with distribution to Congress and the public by 31 March. Copies of the report are also distributed to MACOMs, Installation Commanders, and program executors.

## **CHAPTER 7: CONTRACTING**

This chapter describes procedures for implementing IRP or BRAC ERP contracts and contractually managing the IRP or BRAC ERP. Specific procedures and requirements of contracting offices and Remedial Project Managers/BRAC Environmental Coordinators (RPMs/BECs) may vary depending upon the extent to which the installation manages its IRP or BRAC ERP. However, it is the RPM's or BEC's responsibility to:

- Contact designated or alternate contracting offices to determine their capacity to support expected contract actions and to identify specific contracting office requirements.
- Review, with the Installation Commander (IC), whether resources are available within the installation, Army, Federal agencies, or through private sector contracts to meet the response action requirements for the site. This also includes obtaining multi-cost contract estimates for project management services from the USACE or other contract support offices.

Unless the RPM/BEC will be the Contracting Officer's Representative (COR), the RPM/BEC will coordinate with the COR to ensure that the following actions are achieved:

- Determine whether existing contracts can be utilized before initiating new contracts for environmental work (e.g., through records search).
- Arrange for procurement of a technical support contractor in a manner fully consistent with all existing acquisition regulations and guidelines.
- Ensure that contract specifications are complete and accurate in order to fulfill the government's needs.
- Provide technical oversight and guidance to the contractor to ensure that work products fulfill best practices and the standards as established in the contract.
- Monitor the contractor's compliance with all terms and conditions of the contract to ensure that government resources are reported and expended appropriately.

It is important to remember that authority to formulate and administer contracts is held only by Contracting Officers (KOs). A Project Officer (PO) in coordination with the KO develops the Procurement Request (PR) and a COR guides and monitors the contractor's performance. In practice, the PO and the COR may be the same person. Throughout this chapter, the PO and COR will be treated as though they were the same person, and this Guidance Manual will address COR duties presuming that person both prepared the PR and manages the contract task(s). The RPM/BEC may be assigned by the KO to serve as the PO/COR.

NOTE: Most Army installations use the acronym “KO” to differentiate the Contracting Officer from the Commanding Officer of the installation. USACE divisions and districts use the acronym “CO” for the Contracting Officer. Also, the term Contracting Officer’s Technical Representative (COTR) is the same as “COR.”

Potential CORs are reminded that their authorities while working with contractors are limited to those delegated in a Letter of Designation issued by the KO after contract award. The KO is the only person authorized to sign, modify, or terminate a contract, and only the KO can commit government funds. Even though the RPM/BEC directs IRP/BRAC ERP activities and may be designated as the COR, the RPM’s/BEC’s role in controlling contract activities is limited.

The RPM/BEC may have some discretion in selecting a contracting office to manage their contracts. In general, it is preferred that the contracting office has experience with research and development type contracts and architectural/engineering service contracts.

The contract acquisition process is typically divided into three phases:

- Presolicitation.
- Solicitation and Evaluation.
- Contract Administration.

The presolicitation phase lays the groundwork for soliciting offers and awarding a contract. In this phase, tasks such as the following are performed:

- Identifying the need for products or services and planning to meet that need.
- Preparing a Management Decision Document.
- Preparing a Statement (or Scope) of Work (SOW).
- Preparing the Independent Government Cost Estimate (IGCE).
- Identifying and committing sufficient funds to acquire the deliverable.
- Preparing purchase requests.
- Researching the market for the needed work.

In the solicitation and evaluation phase, tasks such as the following are performed:

- Determining the extent of competition for award.
- Establishing technical, price-related, and other evaluation criteria for competitive acquisitions.
- Determining the method of acquisition (invitation for bid or negotiation) and type of contract (fixed price or cost reimbursement, and appropriateness of various incentives for the contract).
- Drafting the solicitation.
- Publicizing the proposed acquisition.
- Answering the inquiries from potential offerors and conducting prebid or preproposal conferences.

- Evaluating bids or proposals based on the evaluation plan for the acquisition and the criteria in the solicitation.
- Setting the competitive range and discussing proposals with offerors.
- Determining the responsibility of the potential awardee.
- Awarding the contract.
- Debriefing unsuccessful bidders.
- Responding to protests of the award by unsuccessful offerors.

In the contract administration phase, the following tasks are performed:

- Orienting the contractor.
- Monitoring compliance with terms of the contract by both contractor and government personnel.
- Inspecting and accepting contract deliverables.
- Determining whether to stop work, extend delivery dates for excusable delays, or apply formal contractual remedies, if problems arise.
- Determining the timing and amount of payments to contractors, based on the contract terms.
- Modifying or terminating contracts, where necessary.
- Closing out the contract.
- Responding to contractor claims, if any, for additional money.

The focus of this contracting section is primarily on “large” contracts (typically over \$100,000); however, another common type of contracting mechanism is the Simplified Acquisition Procedure. This procedure was designed to streamline the acquisition process and facilitate the procurement of goods and services quickly and easily. Typical benefits of this process include:

- Solicitations are shorter.
- Contracting methods are more direct.
- Payment methods are quicker and reduce cost for the contractor and the government.
- Competition requirements are less burdensome.
- Selections are easier and require less documentation/paperwork.
- Verbal solicitations are acceptable.
- Award can be based on price alone or on price plus other factors such as prior performance or other specialized skills.

A detailed discussion of the Simplified Acquisition Procedure is provided in Section 7.5.

## **7.1 COR DUTIES AND TASKS**

The information that follows summarizes basic concepts in procurement as they apply to the IRP and BRAC ERP. Each procurement activity may have variations; however, the basic concepts are applicable.



### 7.1.1 The COR and the KO

If the COR is not the RPM/BEC, the COR will coordinate closely with the RPM/BEC to achieve the following activities:

- Determine whether existing contracts can be utilized before initiating new contracts for environmental work (e.g., through records search).
- Arrange for procurement of a technical support contractor in a manner fully consistent with all existing acquisition regulations and guidelines.
- Ensure that contract specifications are complete and accurate in order to fulfill the government's needs.

The COR will develop a PR to justify securing contractual services and may participate in a variety of functions both before and after award. In the majority of cases, the COR's role is limited to preparing the PR and subsequent monitoring of contractor performance. In certain procurements, however, the COR may perform multiple functions to:

- Plan for the contract.
- Coordinate with support specialists.
- Prepare the PR.
- Participate in Pre-Proposal Conferences.
- Evaluate proposals or chair the evaluation committee.
- Participate in negotiations.
- Participate in Pre-Award Conference.
- Participate in debriefing unsuccessful offerors/quoters.
- Monitor contractor's technical performance.
- Monitor contractor's cost performance in relation to the technical effort.
- Determine acceptability of completed effort.
- Participate in contract close-out.

The COR is **not** the KO. This means that the COR **has no legal authority to:**

- Authorize changes in a contract's scope, level of effort, period of performance, or modify any existing terms and conditions of the contract.
- Grant any extensions of time or approve any deviations from the SOW as approved by the KO.
- Suggest, state, or promise that changes, extensions, expansions, or revisions to the agreed-upon SOW will be forthcoming.
- Authorize the contractor to undertake work beyond the monetary limits of the contract; nor advise the contractor to halt work which may result in excess costs to the government.

All changes in the terms of a contract can legally be made, and are to be made, **ONLY** by the **KO THROUGH PROPERLY EXECUTED MODIFICATIONS TO THE CONTRACT.**

Individuals qualified to serve as CORs will be trained in accordance with the requirements of Army Federal Acquisition Regulation Supplement (AFARS) 42.90. NOTE: USACE has a companion Engineer Federal Acquisition Regulation Supplement (EFARS). The point is made throughout this chapter that the COR has a limited and prescribed set of duties and responsibilities. The legal restrictions on the COR are emphasized for two reasons:

- CORs often have day-to-day contact with a contractor facing difficulties meeting the requirements of the SOW and genuinely wish to help; but
- Exceeding the legal restrictions may put the COR personally at risk for cost overruns and loss (e.g., the contractor might sue for recovery of costs subsequently disallowed by the KO).

When a COR exceeds his/her authority, the KO will prepare and forward a letter to the COR pointing out the improper action and remind the COR of the limitations of his/her authority under the COR appointment procedures. When appropriate, the KO may revoke the COR appointment immediately without giving the COR further warning. A copy of the revocation will be included in the contract file.

### **7.1.2 COR Tasks**

The COR has a set of legally-defined task responsibilities. Key to executing these responsibilities is establishing, at the very outset, a system for filing in a readily retrievable manner all the records and information the COR is responsible for maintaining. At a minimum, the information to be maintained includes:

- A copy of the signed and acknowledged COR appointment letter.
- A copy of the contract with all modifications.
- Memoranda of telephone conversations which relate in any way to the contract.
- A copy of the trip report (within 7 days) of every visit that has been made to meet with the contractor.
- A copy of the minutes of all meetings and conferences with the contractor to include names of persons present, dates, matters discussed, and actions taken.
- A copy of all approvals the COR has given to the contractor.
- Copies of all data, reports and other documentation furnished by the contractor, and the COR's analysis, action taken, and the date of such action.

- Records of any inspections performed under the contract, to include dates, manner of inspection, and results.
- Any other documentation and data necessary to provide a complete history of all action taken by the COR under or in connection with the contract.

The COR is required to provide this information when requested to the KO, Inspector General, General Accounting Office (GAO), or any other person designated by the KO as having a valid need. Meeting this requirement starts with a good information management retrieval system. All COR files should be maintained in accordance with the Modern Army Recordkeeping System (MARKS). The COR's responsibilities include not only maintaining project files, but documenting work performance, guiding the execution of the work, monitoring expenditures to preclude overruns, and minimizing the need for supplemental funding. The COR best accomplishes these duties by:

- Monitoring the contractor's technical compliance with contract terms through visits to the contractor's facility, and review and acceptance of drawings, designs, samples, reports, data, and other materials required by the contract.
- Furnishing to the contractor, or making the arrangements through the KO to furnish, all technical information, materials, data, or equipment designated by the contract as government-furnished materials.
- Reviewing the contractor's Monthly Cost and Performance Reports, and performing an analysis of actual performance against milestones in the SOW to ensure that the overall schedule is being met.
- Reviewing the contractor's Monthly Cost and Performance Reports, and noting variances between planned and actual expenditure levels. Analysis of these variances may result in recommendations to the KO to:
  - Change the SOW to eliminate or control the variances.
  - Increase the cost ceiling (with or without fee) for a specific task or contract period.
  - Cancel the contract either for cause or for the convenience of the government.
- Maintaining historical records of costs paid for chemical analyses to help ensure the Army can negotiate the lowest available price by identifying the lowest price paid in the past; and to effectively plan for and use quicker analyses turnaround times only when necessary and ensure these needs are included in new contracts. (NOTE: Expedited or quicker turnaround times should be used only when justified by the risks and costs of standard turnaround delays).

- Providing an evaluation of the contractor's overall performance to ensure timely and proper close-out of the contract. All evaluations, from "Less Than Satisfactory" to "Exceptional" must be supported by project records and memoranda.

## **7.2 COR FUNCTIONS**

Virtually all IRP/BRAC ERP site work is performed through contractors. The COR creates the SOW, coordinates all contract actions, assists in selecting the contract type and, guides contractor performance. The procedures described in this section are not cited as requirements, but are presented as examples of how COR functions may be accomplished.

### **7.2.1 The Procurement Process**

The Army IRP/BRAC ERP workload is defined by consolidating eligible requirements from MACOMs and their respective installations into the Army IRP Obligation Plan or the BRAC Work Plan (see Section 6.1). Funding of the IRP and BRAC ERP will be through the MACOM to the installation or to USACE as directed by the MACOM. After award, the contract is monitored for both technical and financial execution.

The RPM/BEC, in consultation with the IC, selects the appropriate procurement group. The procurement group can be one of the following entities:

- A Government Owned, Contractor Operated (GOCO) facility at the installation being investigated.
- District of the USACE.
- The installation's KO.
- Other government agencies with unique support capabilities.

The PO or RPM/BEC provides a PR to the procurement group which then drafts and negotiates the actual contract. The information typically required to be provided in a PR is:

- **Statement of Work** - The SOW describes work to be performed by the contractor during site activities. The SOW is the most important procurement element and should be developed in collaboration with personnel identified by the RPM/BEC to perform technical review.
- **Cost Estimate** - The COR prepares the IGCE as part of the procurement process. The COR's Resource Management unit can provide background data and general assistance in preparing/reviewing the cost estimate. Information from previous projects can be utilized in cost estimating and the COR's Resource Management unit can provide contractor labor rates and direct cost estimates.

- Management Decision Document – Many procurement offices require a Management Decision Document or a similar document. The Management Decision Document serves the same function as an Acquisition Plan, in that it summarizes the intent of the PR. The document, depending on the size of the intended contract, seeks higher headquarters approval of the PR within the procurement chain-of-command.
- Instructions to Offerors - The COR provides to the procurement group information that potential contractors can use to develop a proposal. This information may include:
  - Contract Data Requirements List.
  - Data Item Description requirements.
  - Copies of Army/USEPA guidance applicable to the work to be performed.
  - Pertinent information from previous studies.
  - Maps, geological data and chemical data, if not otherwise readily available to potential contractors.
- Source Selection Plan - The COR may be asked to write a Plan which describes how technical proposals submitted by potential offerors will be evaluated. Evaluation criteria and the approximate weight of the criteria are shown on the Request for Proposals and should reflect the work to be performed. For example, in RI/FS work, award points are given for a contractor with historical experience. For RD/RA, recent experience in construction management cost savings may be heavily weighted.

It is suggested that all acquisition plans that affect procurement strategy be sent for staffing through the PO or the RPM/BEC to the approving authority. To preclude disclosure of sensitive Army procurement planning information, protective markings should be used for all acquisition plans, e.g., FOR OFFICIAL USE ONLY or PROCUREMENT SENSITIVE.

At the discretion of the KO, the PR may also contain any of the following:

- SOW Synopsis.
- List of Potential Bidders.
- Concurrence Sheet.
- Enclosures Checklist.
- Procurement Request and Summary.
- Advance Synopsis (Request For Proposal (RFP)).
- Personal Services Factors.
- Security Classification.

See Section 7.7 and Appendix I for the various types of contracts that could be awarded for restoration projects.

## **7.2.2 Technical Oversight**

With the award of a contract, the COR assumes a set of general responsibilities for guiding, directing, reviewing, and approving the contractor's work. These activities are summarized here. Specific COR functions during the site remediation process are described subsequently.

### **7.2.2.1 Work Assignments**

The COR is responsible for development of the work assignments which define the tasks the contractor is expected to perform. Work assignments should contain the following elements:

- Site background.
- Nature and extent of problem.
- Summary of work accomplished to date.
- Period of performance.
- Purpose of the work.
- Description of the services to be performed.
- Required deliverables.
- Reporting requirements.

The SOW should be sufficiently detailed to define what must be done under the activity, yet not so detailed as to reduce the contractor's flexibility in developing an effective work plan to respond to the Army's needs.

### **7.2.2.2 Work Plan Review and Approval**

The COR's objective in reviewing a work plan is to assure that the contractor understands the project and can deliver timely, high-quality work at a reasonable cost. Most of the tasks in the proposed work plan can be examined from a standpoint of technical quality, budget, and schedule.

Work plans necessarily vary in terms of technical content depending on the specific work to be performed. For an RI/FS, the contractor's work plan typically should include:

- The purpose, scope, and methodology for each task.
- The proposed quantity, distribution, and purpose of each groundwater, surface water, soil, air, and other sample.
- The spacing and depth of soil borings and monitoring wells and the purpose for each.
- The types and purpose of each analysis likely to be required, based upon near-term technology forecasts.
- The use of bench- and pilot-scale studies.

- The use of groundwater or other models.
- The general relationship between the pathways to receptors, the likely alternatives, and the scope of the RI/FS.
- Procedures for the Baseline Risk Assessment.

The schedule and organization of the project should be reviewed to ensure that task durations seem reasonable, no resource conflicts exist, the sequence of tasks seems appropriate, and events are scheduled in appropriate seasons. Also, the schedule must comply with any Interagency Agreement (IAG) or other regulatory milestones.

The COR should manage the work plan review process to ensure a timely response. For sites requiring a complete RI/FS or RD/RA, the COR should distribute copies of the draft work plan to technical specialists such as geohydrologists, toxicologists, chemists, and biologists and solicit their comment.

The COR is responsible for providing to the contractor written acknowledgment of receiving the work plan, and for sending copies to the assigned parties for review. Time allotted for review is to be determined by the contractor and COR; however, the RPM/BEC, regulators, and prior agreements may dictate specific review times. Upon approval of the work plan, the KO should provide to the contractor written authorization to proceed.

### **7.2.2.3 Monitoring Contractor Performance**

The COR has two essential responsibilities for contractor performance. One is procedural, the other is technical. The first concerns the budgets, due dates, overall schedule, and adequacy of funds. The second concerns the technical quality of the work, the integrity of the data, the extensiveness of the analyses, and the clarity of the conclusions. Each is discussed below. In addition, the COR responsible for inspection/acceptance of the work is designated the evaluating official for preparing the performance report (DD Form 2626, Performance Evaluation (Construction)). The reviewing official shall be the KO. A copy should be included in the contract file.

Managing Project Activities for Cost-Reimbursable Contracts - Each work plan reviewed and approved by the COR for cost-reimbursable contracts contains a schedule and a budget. Project activities should be monitored on a task-by-task basis using accomplishments and expenditure data in the contractor's monthly reports to compare actual events against the plan. If separate tasks do not distinguish among analytical costs, field work, document preparation, and project management activities, reporting by activities such as these within individual tasks may be necessary in order to enable analysis of significant differences in either budget or time estimates. The COR also should meet routinely with the contractor's Project Manager to review:

- Progress of each task.
- Projected expenditure levels.
- Schedule status of each task.

- Budgetary status of each task.
- Overall project schedule and budget.

This information is normally provided on a monthly basis, as part of the Monthly Cost and Performance Reports. The COR is expected to use this information to plan for potential modifications to the contract. If time delays are unavoidable, the COR may recommend to the KO an extension of a specific due date or of the task's period of performance. If funding levels are inadequate, the COR may recommend raising the ceiling or exercising an option early in the contract. If, however, delays and expenditure overruns are the responsibility of the contractor, the COR may recommend actions appropriate to the situation (e.g., zero award fee points).

Managing Contractor Products - The COR, more than any other IRP/BRAC ERP staff person, knows the technical problems the contractor faces, the requirements under which the work is being done, and the policies and guidelines that drive the work. It is incumbent upon the COR to be as authoritative as possible on the following topics that are key to quality site work:

- Sampling and analysis techniques of contaminated media.
- Environmental fate and transport models.
- Risk and exposure assessment methods.
- Environmental impact assessment.
- Evaluations of remedial technologies.
- Cost estimation and value engineering.
- Remedial design and construction considerations.

In addition to these technical areas, the COR should be familiar with all pertinent environmental regulations and policies that will affect how the technical disciplines are applied to a particular site. The COR can then provide adequate quality assurance review of project activities and reports.

It is suggested that the COR be familiar and effectively utilize performance documentation procedures outlined in DOE's Documenting Cost and Performance for Environmental Remediation Projects (DOE, 1996). The purpose of this DOE guide is to facilitate the use of consistent procedures to document cost and performance information and provides remedial project managers with a standardized set of data to document completed remediation projects. Standardized reporting of data broadens the utility of the information, increases confidence in the effectiveness of future remedial technologies, and enhances the organization, storage, and retrieval of relevant information for future cleanup projects. It is recommended that this guide be used in conjunction with the Guide to Document Cost and Performance for Remediation Projects, Federal Remediation Technologies' Roundtable (USEPA, 1995). Also refer to FAR, Part 9, for additional information on policies, standards, and guidance on contractor selection.



#### **7.2.2.4 Contract Modification**

Only the KO can modify, change, redirect, or cancel an executed contract between the contractor and the government. However, it is the COR who most often determines that a modification is required to affect the technical direction, schedule or total resources needed to complete the project.

The COR uses progress reports and meetings to track the technical and financial status of the project and spot the need for contract modifications. When contract modifications become necessary, the COR should:

- Discuss potential amendments with the KO.
- Ensure that the proposed modification is consistent with the approved SOW in the contract.
- Prepare a modification package and forward to the KO for approval and execution.
- Maintain a signed copy of modification package in the site project file.

In general, a modification request should be initiated for each modification needed. However, in the case of minor modifications, several may be combined into one request.

#### **7.2.2.5 Review and Approval of Final Report**

A final report is usually the final deliverable in a contract. It is the COR's responsibility to ensure that the report is complete and is presented in a format that facilitates DoD review. The COR is responsible for the completion of a Report Documentation Page. In most cases, the contractor will actually complete the page. See Appendix I for information on completing the Report Documentation Page. COR must also coordinate the external review and approval of the report. To accomplish these activities, the COR should:

- Discuss with the contractor any changes that need to be made in the report format specified in the SOW.
- Coordinate report reviews by IRP/BRAC ERP staff and other parties.

#### **7.2.2.6 Contract Close-Out**

Following completion of all work as specified in the contract and the approved work plan, the COR prepares and processes the required project close-out documentation. If the contractor is required by the contract to submit to the Government all hard copy and computer-generated information (including duplicates), either acquired or internally generated, the COR must receive such information prior to initiating close-out. Project close-out documentation includes the:

- Contract completion report.
- Final completion voucher.

The final close-out may be delayed for several months because of late receipt of outstanding invoices.

### **7.2.2.7 Disbursement**

Section 6.5.2 stresses the need to expedite disbursements to the contract for the benefit of both the government and the contractor. Installations and their Executing Agencies must take steps to expedite the disbursement process. Although disbursement is dependent upon the contractor completing the assigned tasks, efforts should be taken in the contract scoping process to ensure that costly project efforts such as those listed below occur as early as possible in the contract schedule:

- Sampling and Analysis.
- QA/QC of the associated environmental data.
- Additional sampling efforts, as may be required by the regulatory or executing agencies.
- Treatability studies.
- Long-term or short-term monitoring efforts that may be required concurrent with the investigation phase.

Some other beneficial actions include:

- Not planning extensive sampling and analysis tasks late in the contract but planning to use new follow-on contract tasks if additional sampling is required.
- Making certain that the contractor submits timely Cost and Performance Reports, and ensuring that they are reviewed immediately and approved for disbursement as soon as possible.
- Breaking down an extensive RI/FS contract task into smaller tasks or efforts that can be awarded as needed; since, long term contracts with extended "Outlays" have the possibility of attracting financial audits and other procedural reviews in the future.

## **7.3 COR FUNCTIONS DURING SPECIFIC ACTIVITIES**

### **7.3.1 Removals**

Emergency removals, to respond to an imminent threat where there has been no prior planning or procurement action, should be coordinated by the COR with the KO and the On-Scene Coordinator (OSC) at the installation. The OSC is responsible for the Spill Prevention, Control and Countermeasures Plan. Also, the OSC may have authority to contract for emergency services from local vendors. The costs of the emergency response may be reimbursed from ER,A or BCA funds if the site is eligible (see Chapter 1).

To anticipate the potential for a removal during an SI or field sampling for an RI/FS, the COR could include procedures in the contract, for example:

- The contractor notifies the COR of the situation.
- The COR recommends to the KO a Stop Work order to protect worker health/safety.
- If the contract SOW allows for such removals and a removals subcontractor is on the team, a task can be initiated to effect the removal.

Otherwise, if sufficient time exists, the COR can request, through appropriate channels, an Architect and Engineering (A&E) contract to evaluate the problem, generate alternatives, and design the appropriate response.

### **7.3.2 Identification Phase**

For those sites requiring only PA/SI services, the SOW and work plan requirements are basically minimal. A Site Screening Inspection (SSI), which is a selective process for identifying the worst sites for funding or Hazard Ranking Score (HRS) scoring, may be needed. For most installations, the Preliminary Assessment (PA) of the known sites has already been completed, but some incremental data may be needed to complete the HRS.

Given that site work requires field visits and sample collection, the contract must require the contractor to prepare and submit for approval the Site Health and Safety Plan and the Sampling and Analysis Plan described previously in Chapter 4. The contract also should require a final report which summarizes all field work and the final results of the SI.

### **7.3.3 Investigative Phase**

The RI/FS effort may be lengthy, complex, challenging, and costly. As a production process, it lends itself to the use of a delivery order type contract and management of specific activities on a completion basis.

As an initial task, the contract should require that the contractor provide for COR review and approval, a more complete set of planning documents than required for the PA/SI. At a minimum, the contractor should be required to develop a set of documents that include the:

- Sampling and Analysis Plan.
- Site Health and Safety Plan.
- Public Involvement and Response Plan.
- Financial Management Plan.

During the development of an RI/FS, it is important that the COR monitor contractor performance as described previously in this chapter.

During on-site work, it is critical that the COR, RPM/BEC, and the Contractor Project Manager coordinate frequently. In some cases, the actions of the contractor in performing the requirements of the contract may conflict with tenant (e.g., Defense Reutilization and Marketing Office, Test and Evaluation Laboratory or Range, etc.) operations. The tenant representative (frequently mid- to high-level officers or civilians) may request actions from the contractor that violate the terms of the contract (e.g., stop work, collect more samples, change locations and

numbers of monitoring wells). The Contractor Project Manager, while being polite to the tenant representative, must contact the COR or KO, before making changes to the contract scope. In these types of situations, the COR or KO must resolve the problem with the tenant representative. Only the KO can authorize changes to the scope of the contract.

#### 7.3.4 Cleanup Phase

In most cases, procurement of design services from A&E firms will follow the guidelines for a Brooks Bill Procurement. This is a two-stage process in which firms submit their qualifications (independent of price) to do the work. Qualifications are reviewed and a select few firms are interviewed to obtain further information. Firms may also be requested to provide a briefing to describe their approach to the work. A contractor is selected and the cost is negotiated for the work.

During this process, the COR normally will:

- Synopsize requirements for publication by the KO in the Commerce Business Daily.
- Designate A&E pre-selection and selection boards.
- Develop an A&E pre-selection list.
- Contact A&E firms to ascertain interest in the project.
- Develop an A&E selection list.

The primary activities of the COR during remedial design is to monitor the A&E contractor to ensure the design package being developed is consistent with the Decision Document (DD). The COR must be alert to potential or actual design changes and, if significant, notify the KO.

In addition, the RD stage is the point at which value engineering opportunities should be encouraged. The COR should review all design proposals for cost reduction opportunities such as in materials specifications, quantities, or fast-track activities. **The COR should not, however, recommend to the KO any changes in the requirements of the DD without first consulting with the RPM/BEC and cognizant regulatory agency (USEPA or State).**

When the RD package is complete, the COR should review the final remedial action cost estimate against the FS and ROD/DD cost estimates and resolve any discrepancies with the KO and RPM/BEC to ensure adequacy of funds for construction.

Contracts for construction of remedial actions are subject to the wage requirements of the Davis-Bacon Act.

As construction of the remedial action nears completion, the COR should discuss procedures for project termination and close-out with the contractor. The COR should note any outstanding construction items and ensure that they are completed within the existing SOW.

If there are long-term operations components to the RA, a new A&E contractor may be procured to evaluate and monitor the system. The long-term operations contract should require the A&E contractor to submit on a quarterly basis:

- A description of on-going O&M activities.
- Results of site monitoring.
- Performance deficiencies and recommendations.
- Planned O&M activities.

#### **7.4 SMALL BUSINESS CONTRACTING**

It is national policy that a fair proportion of the products and services used by the DoD and Army shall be purchased from small businesses and small disadvantaged businesses. Certain factors limit the Army's ability to contract with small business. Vast amounts of facilities and working capital are required to produce major weapons systems. In many cases, even the resources of large business can be strained by performance and cost risks. To offset these factors, the Army has implemented a major program to ensure the award of a fair proportion of its contracts to small businesses. This program includes special personnel to assist small businesses, and the following purchasing procedures:

- Permitting offers on less than the total requirements for terms and conditions and allowing the maximum time possible for preparation of offers.
- Setting aside, for award to small business only, any procurements where there is a reasonable expectation that at least two responsible small businesses will offer the products of small business concerns at reasonable prices. Most purchases under \$25,000 and construction contracts under \$1 million are awarded to small business. Once a product or service has been successfully purchased under a small business set-aside, future purchases are usually also set aside.
- Setting aside a portion of a procurement that would otherwise be too large for a total small business set-aside. Any large or small business can compete for the non set-aside portion. Small business is then given the opportunity to receive a contract for the set-aside portion at the price of the non set-aside portion.
- Having the Small Business Administration (SBA) review a small business' capability in the event the contracting officer determines it to be nonresponsible.
- Encouraging large Army contractors to subcontract with small businesses and women-owned small businesses.

In addition to helping all small business firms, the Army provides special emphasis to increase participation by small disadvantaged business firms. The main features are as follows:

- Seeking small disadvantaged business firms to supply the needed products and services, and setting aside for small disadvantaged business firms those solicitations where the Army can expect to obtain satisfactory performance, adequate competition, and a reasonable price from among the respondents.
- Contracting directly with the SBA, which will then subcontract the work to small businesses certified by the SBA as being socially and economically disadvantaged. The Army and SBA identify products and services that can be provided by small disadvantaged businesses that have an SBA-approved business development plan. The FAR (Subpart 19.8) provides detailed information on this procedure.
- Encouraging special attention to small disadvantaged business firm by the Army's large prime contractors in their programs of subcontracting.

The Army awards contracts only to contractors found responsible. The purchasing activity must evaluate the offerors in order to make a positive finding as to responsibility. Getting accepted as a "responsible" contractor is not like getting on a qualified products list. The contractor cannot arrange for a survey at their convenience and wait until they are approved before submitting an offer. The determination of responsibility is done only in connection with an offer when the contractor is the apparent low offeror. To be found responsible, the contractor must be able to demonstrate that they:

- Have, or are able to obtain, adequate financial resources.
- Are able to comply with the delivery requirements.
- Have a satisfactory record of performance.
- Have a satisfactory record of integrity and business ethics.
- Have, or are able to obtain, the necessary organization, experience, accounting and operational controls, and technical skills.
- Have, or are able to obtain, the necessary production, construction, and technical equipment and facilities.
- Are otherwise qualified and eligible to receive an award under applicable laws and regulations.

Small businesses frequently offer lower costs because they: have lower overhead, are more specified, are more specialized, work in a smaller geographical area, know the local regulations, and are ideal subcontractors. However, sometimes a KO proposes to reject the low offer of a small business firm because of doubt as to whether the firm is sufficiently responsible to perform the contract. In that event, the case must be referred to the SBA. If the SBA determines that the

small business firm is responsible, the SBA issues a Certificate of Competency to the contracting officer, who then must award the contract to the small business firm.

Another program, referred to the 8(a) Program, encourages participation of small businesses owned by socially and economically disadvantaged minorities in the mainstream of the nation's economy. The term 8(a) refers to Section 8(a) of the Small Business Act of 1958 which permits the SBA to act as the prime contractor for federal agencies procuring goods and services, and then subcontract the actual performance of the work to the 8(a) certified companies. A detailed description of how the 8(a) program functions is provided in Appendix J.

## **7.5 SIMPLIFIED ACQUISITION PROCEDURE**

Simplified Acquisition Procedures are streamlined techniques and guiding principles designed to reduce the administrative burden of awarding the lower dollar value procurements that account for the vast majority of DoD Acquisition. They allow informal quoting and competition procedures, encourage accepting oral quotes versus written quotations, prefer comparing quoted prices in lieu of conducting negotiations, and provide streamlined clauses to support the award document.

The "Competition in Contracting Act" (CICA) provided a legal exemption at 10 U.S.C. 2304(g) from using "Formal Contracting Procedures" to procure requirements under \$25,000. The Federal Acquisition Streamlining Act (FASA) and the Federal Acquisition Reform Act (FARA) subsequently provided further changes to what became known as "simplified acquisitions" and "simplified acquisition threshold" (SAT) of \$100,000, created a sub-category referred to a micro-purchases (purchases under \$2,500), created a small business reservation which requires the contracting officer to restrict solicitations exclusively to small businesses on action between \$2,500 and \$100,000, and allowed for options and "best value" criteria. FARA/FASA also changed the time frame for responses to advertisement in Commerce Business Daily from 30 days to a "reasonable response time." Additional, FARA/FASA stated the Government's preference for the acquisition of "commercial items" and permits the use of simplified procedures up to \$5 million for the acquisition of commercial items.

Soliciting/Advertising purchase actions using simplified acquisitions is predicated upon the dollar value of the requirement. Federal Acquisition Computer Network (FACNET) is the preferred method of advertising simplified acquisitions. However, if FACNET is not available or a written determination has been made that it is not practical or cost-effective to use, the following solicitation procedures should be used:

- Actions \$2,500 to \$25,000 should be solicited orally whenever possible.
- Actions \$10,000 to \$25,000, which are solicited in writing, will be posted in a public place (the SF 1449 of SF 18 forms are used in simplified acquisitions to issue solicitation in writing).

- Actions \$25,000 to \$100,000 have to be synopsisized in the Commerce Business Daily. Contracting Officers are "required" to establish a "reasonable response time" having considered the complexity of the item and the amount of time the contractors need to respond to the notice.
- Actions \$25,000 to \$5 million for the acquisition of commercial items can use FAR Part 13.6 procedures and issue a combined solicitation/synopsis (requires less than 12,000 characters).

The Simplified Acquisition Procedures are listed in Part 13 of the FAR. This part describes policies and procedures for the acquisition of supplies and services, including construction and research and development, the aggregate amount of which does not exceed the simplified acquisition threshold (currently set at \$50,000). Procedures for awarding an amount exceeding \$50,000 are listed Part 13.103(b) of the FAR. Simplified procedures to be used when acquiring architect-engineering services are listed in Part 36.602-5.

Typically, simplified acquisition procedures are used to make purchases of supplies or services using imprest funds, purchase orders, blanket purchase agreements, Government-wide commercial purchase cards, or any other appropriate authorized method. Some key terms and their definitions are provided in the Sections below.

#### **7.5.1 Imprest Fund**

An imprest fund is a cash fund of a fixed amount established by an advance of funds, without charge to an appropriation, from an agency finance or disbursing officer to a duly appointed cashier, for disbursement as needed from time to time in making payment in cash for relatively small amounts.

Imprest funds or third party drafts may be used for purchases when:

- The imprest fund transaction does not exceed \$500 or such other limits as have been approved by the agency head.
- The third party draft transaction does not exceed \$2,500, unless authorized at a higher level in accordance with Treasury restrictions.
- The use of imprest funds or third party drafts is considered to be advantageous to the Government.
- The use of imprest funds or third party drafts for the transaction otherwise complies with any additional conditions established by agencies and with the policies and regulations referenced in the FAR, Part 13.401.



### **7.5.2 Purchase Order**

A purchase order is an offer by the Government to buy supplies or services, including construction and research and development, upon specified terms and conditions, using simplified acquisition procedures.

### **7.5.3 Blanket Purchase Agreement (BPA)**

A blanket purchase agreement (BPA) is a simplified method of filling anticipated repetitive needs for supplies or services by establishing "charge accounts" with qualified sources of supply.

The following are circumstances under which contracting officers may establish BPAs:

- There is a wide variety of items in a broad class of supplies or services that are generally purchased, but the exact items, quantities, and delivery requirements are not known in advance and may vary considerably.
- There is a need to provide commercial sources of supply for one or more offices or projects in a given area that do not have or need authority to purchase otherwise.
- Use of this procedure would avoid the writing of numerous purchase orders.

### **7.5.4 Government-Wide Commercial Purchase Cards**

A Government-wide commercial purchase card is a purchase card, similar in nature to a commercial credit card, issued to authorized agency personnel to use to acquire and to pay for supplies and services.

The Government-wide commercial purchase card is the preferred means to purchase and pay for micro-purchases. This is not intended to limit use of the purchase card to micro-purchases, if otherwise authorized under agency procedures, nor is it intended to preclude use of electronic purchasing techniques.

Agencies are encouraged to use the Government-wide commercial purchase card and electronic purchasing techniques to the maximum extent practicable. The Government-wide commercial purchase card may be used to purchase and pay for purchases when authorized, under existing indefinite delivery/indefinite quantity contracts, or from other established contracts in accordance with agency procedures.

### **7.5.5 Fast Payment Procedure**

The fast payment procedure allows for payment under limited conditions to a contractor prior to the Government's verification that supplies have been received and accepted. The procedure provides for payment for supplies based on the contractor's submission of an invoice that constitutes a representation that the supplies have been delivered to a post office, common carrier, or point of first receipt by the Government; and the contractor agrees to replace, repair, or

correct supplies not received at destination, damaged in transit, or not conforming to purchase agreements.

## **7.6 TECHNICAL ASSISTANCE FOR PUBLIC PARTICIPATION (TAPP)**

The TAPP program is an annual funding mechanism that provides community members of the RABs/TRCs with access to independent technical support through the use of government purchase orders. TAPP purchase orders are contracts between the DoD and a service provider with the RAB or TRC as the ultimate client (from a relationship standpoint). The TAPP program has an annual funding limit of the lesser of \$25,000 or 1 percent of the restoration cost-to-complete. All TAPP requests within these limits will be subject to the provisions of the Simplified Acquisition Procedures (as described in Section 7.5) for purchase orders. Additional discussion on the TAPP funding program is provided in Section 6.3.3.6.

With regard to the TAPP, the KO will be required to perform the following functions:

- Know the fundamentals of the TAPP program.
- Interact with both the IC, the COR, and the Installation Co-Chair while the TAPP request is being processed.
- Inform the IC of the government cost estimate of the proposed project so that the Commander can determine whether or not the waiver situation applies and if so, whether to recommend a waiver or not.
- Will be responsible for procuring the services of environmental consultants and for directing the contractor and assessing performance over the project period.
- Working with the RABs/TRCs to ensure the selection of an acceptable contractor and also ensuring that the statement of work is contractually correct.
- Be familiar with the Simplified Acquisition Procedures for processing purchase orders.
- Be able to evaluate certain minimum requirements required by the contractor to perform the duties expected with the program.

The IC must be aware of the budgetary impacts of TAPP purchase orders, so the KO should inform the IC of the government cost estimate of the proposed project so that the IC can determine whether sufficient ER,A or BCA funds exist to support the TAPP project.

Two factors make this program somewhat different from normal contracting efforts. First, there is a difference in procuring the services of environmental consultants, typically from a pool of small businesses. Second, there is a difference in working with a community group (the RAB/TRC) to ensure the selection of an acceptable assistance provider. The Installation Co-Chair will serve as liaison to the community members and is the logical choice to act as the COR.

TAPP purchase orders are contracts between the Army and a service provider; however, the ultimate client is the community membership of the RAB or TRC. It is important that the contractor understand this relationship. Likewise, it is important that the RAB/TRC understand their relationship to the contractor. New taskings or changes to the work schedule or scope must come through the Installation Co-Chair; the community cannot task the contractor directly.

## **7.7 TYPES OF CONTRACTS**

The KO, in consultation with the COR, will determine the appropriate type of contract to ensure that all phases of the IRP/BRAC ERP can be accomplished in a timely and cost-effective manner. The COR will be expected to recommend a specific type of contract appropriate to the technical support needs of an IRP/BRAC ERP site. Figure 7-1 shows the most common types of contracts. A comparison of the various types of contracts is provided in Appendix I.

There are numerous ways to structure the amount to be paid for work performed as required in a government contract. There is one way that is illegal as discussed in Section 7.7.2.8. Many pricing arrangements are case specific and utilized only in complex development and production environments, while others are quite common.

There are two principal payment methods. These are "fixed price" and "cost reimbursement." Each has numerous variations, some of which are discussed below.

### **7.7.1 Cost vs. Price**

It is important to understand the distinction between "cost" and "price." "Price" refers to the total amount paid, including profit. In A&E contracts, the word "fee" means "price." "Cost" refers to the expenses of the contractor that, when added to a profit, comprise the total price. References to "profit" and "price" are not used in the universe of cost-reimbursement contracts in which "profit" is referred to as the "fee," and "price" is not mentioned. NOTE: The contract will refer to "estimated cost plus fee" but that really is only an estimate and not the final "price" paid under the contract.

Fixed Price contracts involve payment of an amount based upon delivery of supplies or performance of a service. The amount paid is determined by some defined increment, and to what extent the contractor's costs vary is generally irrelevant to that amount (see the discussion of "Fixed Price Incentive" contracts, below).

Cost Reimbursement contracts, on the other hand, involve payment for amounts expended by the contractor, plus a fee, as appropriate.

The purpose of contract pricing is to reward the contractor for successful performance, and to minimize the costs associated with the contract, commensurate with the risks of performance. "Risk" is a critical component of contracting and the choice of pricing type generally reflects the degree of risk involved. As a general rule, cost reimbursement contract types are used in anticipation of significant risk of performance. In this case, the risk represents the unknown factors (e.g., length and depth of contamination plume) while conducting an environmental investigation. On the other hand, procurement of truck tires over a three month period, would result in essentially no risk to the contractor, and the government would be best served by a fixed price contract.

### **7.7.2 Major Pricing Types**

In addition to the basic two types of pricing, there are numerous variations available in order to accomplish certain purposes. There are various modes of price adjustment and incentives which lead to various versions of available contracts. The following are the typical pricing types:

- Firm Fixed Price.
- Fixed Price Incentive.
- Fixed Price With Economic Price Adjustment.
- Cost Plus Fixed Fee.
- Cost Plus Incentive Fee.
- Cost Plus Award Fee.
- Time and Material/Labor-Hour.

#### **7.7.2.1 Firm Fixed Price (FFP)**

This type of contract can also be called "fixed price." However, the description "firm" is often used to distinguish it from other forms of "fixed price" contracts, some of which are discussed below.

A fixed price contract is by far the most common in government contracting. It involves payment of a specific amount for delivery of specified supplies, or performance of a specified service. In many cases, the government may order incremental quantities of the service or supply, so that the total value of the contract may not be known at the outset, but the pricing is fixed, on a per-increment basis. This is referred to as Fixed Unit Price.

The contractor is expected to earn a profit, but the profit is not guaranteed. Even if a loss is incurred, the contractor is required to perform the contract. In return for this rigidity, the fixed price contract constrains the government from asserting control over the performance (except as specifically permitted), and any changes to the requirements may result in a claim for an "equitable adjustment" to the price.

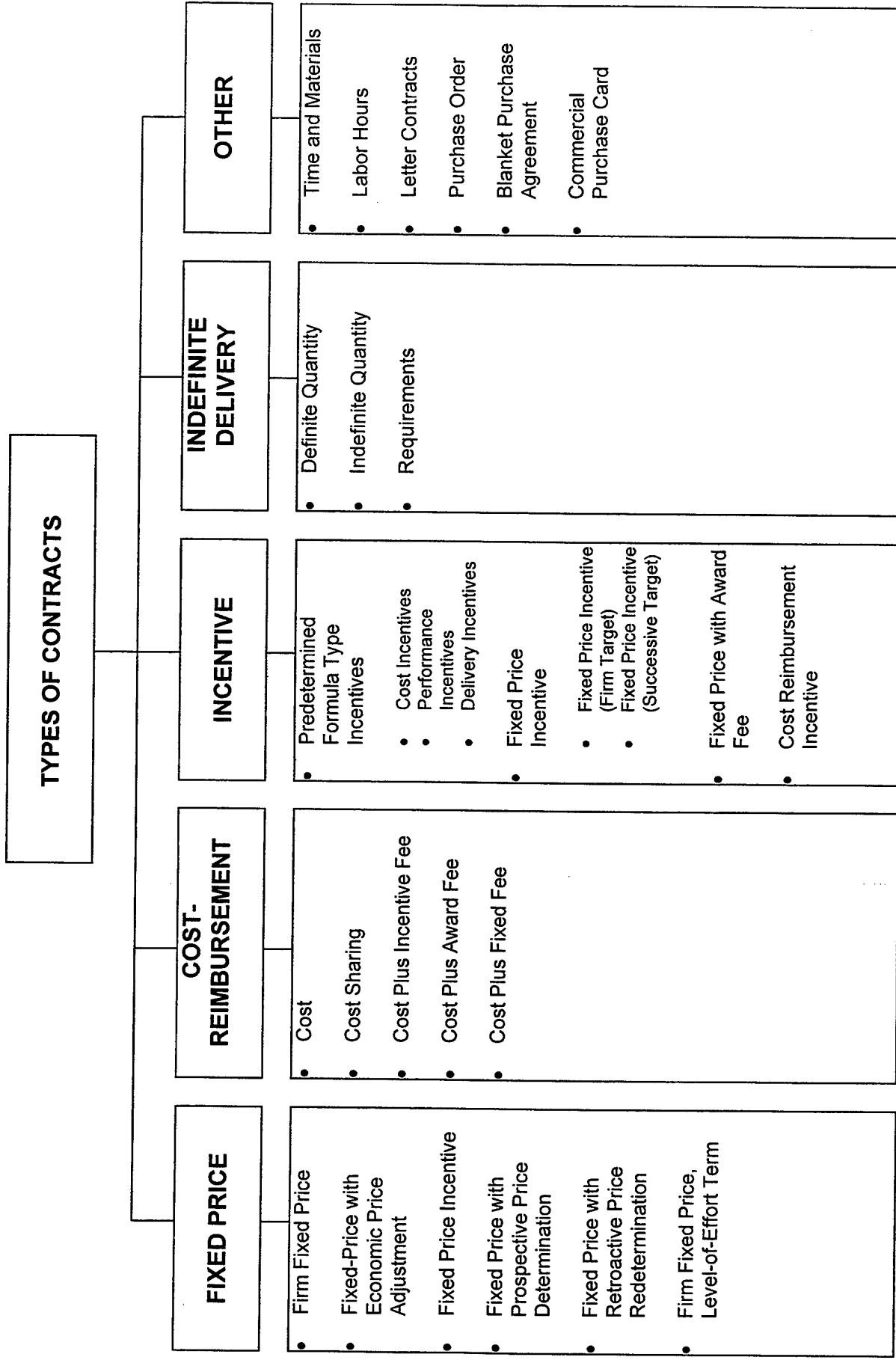


Figure 7-1. Common Types of Contracts

Fixed price contracts have the virtue of being easily administered, and are appropriate where the contract requirements can be well defined and performed without significant risk of failure.

The fixed price contract is inappropriate where the performance is fraught with unknown or unquantifiable risks, or where the government will need to assert significant control over the performance efforts. For example, if the amount of contaminated soil to require treatment is twice the amount specified in the RFP, the fixed price contract would require a modification.

Note that in a fixed price contract, or at least a “firm fixed price” contract, the contractor’s profit increases as the contractor’s efficiency does.

#### **7.7.2.2 Fixed Price Incentive (FPI)**

The FPI contract is a modified form of a fixed price contract. The “incentive” in the name is a reference to the fact that the contract is structured to reward the contractor for certain performance accomplishments. These can be such elements as the speed with which a service is accomplished, or the characteristics of a delivered supply: how high an airplane can fly, for example, or how efficiently a heater works.

Note that the incentive must be objectively measurable and must be linked to the final price paid in a calculable way, based on the measurement. Multiple incentives can be included in a single contract.

There is a special rule (not an inherent characteristic) for the use of FPI contracts in the government: they must always include the contractor’s cost of performance as an incentive component. In practice, this is often the only incentive element in an FPI contract. The resulting structure is somewhat complex, and (one could argue) more reminiscent of a cost reimbursement contract than a fixed price structure.

There are four components to the “price” in a fixed price incentive structure. These are the target cost, target price, ceiling price, and sharing ratio. If the contractor succeeds in performance at the target cost, then it is paid the target price. If its costs exceed the target cost, then the price increases proportionately to the additional costs, until it reaches the ceiling price, at which point additional costs are fully absorbed by the contractor. Similarly, savings in cost result in a proportionate decline of the total price. (This “feature” results in this “Incentive” form being less attractive than a standard FFP contract.) The sharing ratio determines how much of the cost difference is absorbed by the contractor, and how much is shared by the government.

The FPI contract can be difficult to administer. It involves a great deal more intrusion into the contractor’s cost accounting than is necessary in a firm fixed price effort, and the incentive for efficient performance is often less than in a firm fixed price environment.

Typical applications of the FPI contract type exist when a new production effort is being undertaken, and the contractor and government have difficulty agreeing on a price. It gives the contractor some additional pricing room (at a lowered profit) should the costs escalate past expectations, while giving the government a ceiling price to protect it from a total cost explosion.

It is also mandated where other incentives are to be incorporated into the contract.

#### **7.7.2.3 Fixed Price with Economic Price Adjustment**

This type of contract is not very common; it was developed during an era of high economic inflation. It remains available, however, for appropriate circumstances. Such an example might be where a specific commodity (a rare metal, possibly) used in a deliverable item is perceived to be at risk of becoming inordinately expensive at some point during the performance of the contract.

The underlying concept is simple. The price can be adjusted to reflect inflation-induced changes in the contractor's cost of performance. In practice, the structure generally permits adjustment to only specified components of the cost of performance, and only to the extent such inflation is reflected in specified, independently maintained, indices (such as the consumer price index, although that specific index is seldom appropriate).

Finally, it is worth noting that such contracts are used only for long-term (more than a year) requirements.

#### **7.7.2.4 Cost Plus Fixed Fee (CPFF)**

The most common type of cost-reimbursement contract, the CPFF, involves two elements: an estimated cost and a fixed fee. The contractor is reimbursed its costs of performance, subject to three specific constraints, and is paid a fee in addition to those reimbursed costs.

The constraints on the reimbursed costs are that they must (a) be allowable, (b) be allocable, and (c) be under the "limitation" of costs in the contract. Allowable costs are those considered appropriate to government contracts. By legislation and regulation, the government determines that certain costs should not be chargeable to government contracting efforts, or that the costs charged should not exceed a specified amount. Thus, costs of interest are not chargeable, and the maximum individual salary that can be charged to government contracts is \$250,000. (Note that this doesn't mean the CEO can't be paid a million dollars, nor that the company can't borrow money: the amounts simply have to be excluded from computing the costs of performance of government contracts.) There is a general requirement that the costs must be "reasonable," as well. This broad requirement is a mechanism for controlling outrageously expensive expenditures. Allocable costs are costs properly assigned to the specific contract. Improper allocation of costs are the usual sources of high-publicity fraud cases involving major government contractors. The final, Limitation, requirement is a matter of funding. Each contract contains some form of a "Limitation of Costs" clause which prohibits the contractor from expending more funds than are currently available under the contract. In ideal practice, the Limitation of Costs clauses act as triggers to the government to add more funding to the contract as it may be required. Usually, the contractor is required to notify the government when the contractor has expended 75% of the contracting funds.

It is particularly important to note that only those costs which can be fully documented by the contractor are reimbursed. It is quite easy to lose money on a cost-reimbursement effort.

It is also important to note that the fee does not change as the costs increase or decrease. It is “fixed,” and will change only if the overall scope of the work is changed and the fee is renegotiated. There is a limitation on the amount of fee that can be paid, based on the original estimated cost of the contract.

CPFF contracts are used where the risks of performance are high, or the government requires a high level of performance control. Because of the high costs of administration, they are typically used only in higher-value contracts.

#### **7.7.2.5 Cost Plus Incentive Fee (CPIF)**

These contracts are a variation of cost reimbursement contracts, in which the fee varies, depending upon how well the contract performance satisfies certain objectives.

Other than the fee structure, the contract type is essentially the same as a CPFF. The fee includes an incentive, which (as in a fixed price incentive contract) relates to objective performance criteria. Also, as with its fixed price analog, the use of performance incentives requires the use of cost incentives as well.

The fee in a CPIF contract can include a fixed fee component, with the incentive portion being an additional amount. The same limitation on the amount of the fee applies to CPIF contracts as it does to CPFF contracts. This limitation acts as a constraint on the maximum fee that can be earned under the contract.

CPIF contracts are useful in developmental environments, where it is deemed useful to reward particular performance characteristics of the final product design.

#### **7.7.2.6 Cost Plus Award Fee (CPAF)**

This contract type is designed to permit subjective elements to be used to encourage contractor performance. The concept of award is the subjective analog of the objective incentive.

CPAF contracts provide for a quarterly review of the contractor’s performance by the government (typically, the organization receiving the services of the contractor). The review process involves determining how well the contractor has served the organization, and awarding a percentage of the award fee “pool” available for that quarter. Thus, if the available award fee for a given year is \$80,000, the available amount for the quarter will typically be \$20,000. If the organization determines that an 80% award is appropriate, the contractor will receive an award fee payment for that period of \$16,000. (The remaining \$4,000 for that quarter is not carried forward in the award pool.)



As with the CPIF type, the award fee is generally only a component of the overall fee available (standard award fee clauses set out the fee as a percentage of the fixed fee). Also, the total possible fee is subject to the fee limitations.

CPAF contracts are most useful in large services efforts, where it is desired to provide a mechanism for encouraging quality performance by the contractor in areas not easily converted to measurable, objective, standards.

#### **7.7.2.7 Time and Material/Labor-Hour (T&M)**

The “T&M “ contract type is really two closely-related types of contract. In both, the contractor is paid for hours of service without regard to whether the desired task is accomplished. The payment is stated as a class of labor at a specified hourly rate. The Time and Material form also includes a reimbursement provision for the cost of materials (plus a percentage mark-up). It is the inclusion of the materials reimbursement portion that distinguishes a “Time and Materials” contract from a “Labor-Hour” contract.

Such contracts have the unfortunate aspect (from the government’s point of view) of being more expensive to the government and having the least risk for the contractor, of all allowed types. For this reason, T&M/L-H contracts are restricted in use to fairly low dollar values, and are to be used only where other types are not available.

One other requirement of this contract type should be noted. These contracts must contain a ceiling provision, limiting the total expenditures to be made. Some offices attempt to administer the ceiling as requiring completed performance for the ceiling price, but the contract type itself does not require that. (It could be explicitly implemented into the contract terms during negotiations.)

#### **7.7.2.8 The Illegal Contract Type**

There is one type of contract that is illegal in government contracting. It is the Cost Plus Percentage of Cost or CPPC contract. In this type of contract, the contractor’s fee is expressed as a percentage of the total costs expended. The fee grows with the expenditures, and the structure is an invitation to the worst of inefficiencies.

### **7.7.3 Purpose Types of Contract**

There are a number of contract types that refer to the purpose of the contract. Some broadly defined contracts would include supplies, services, and construction. There are also numerous special-purpose contracts, which have particular characteristics. This section will examine a few of these.

Some special purpose contract types have evolved from administrative practice, while others are the result of specific legislation. The formation of a federal government contract is subject to numerous regulations, which impose a variety of clauses (selected from literally hundreds) to be included in a contract. Many of these clauses are to be utilized on the basis of the purpose of the contract. In that sense, any contract that falls in these categories could be considered a “purpose type” as is contemplated by this discussion.

Some common types of contracts include:

- Architect and Engineering (A&E).
- Construction.
- Information Technology.
- Services.
- Research and Development (R&D).
- Selected Purpose Types.

#### **7.7.3.1 Architect and Engineering (A&E)**

The A&E contract type is a creature of statute. Contractor selection is not price-competed, and the amount paid (a “fee,” rather than a price, a source of some definitional confusion) is limited by law, to a percentage of the project cost. The “project” is the proposed construction effort.

A&E firms are often called upon to perform tasks not directly related to the design and engineering tasks contemplated in the fee limitation, and so there are numerous separately-charged elements that may occur to bring the total amount paid in excess of the fee limitation.

The A&E contract generally requires the contractor to deliver a design that can be built within a particular budget. If that budget is exceeded as a consequence of a subsequent bidding effort for the construction project, the firm is generally expected to redesign at no additional fee. (Naturally, such concepts are simple to express, but often result in distinctly complex and lengthy debate as to the cause, extent, and liability for the problem.)

As a final note, A&E contracts do not involve traditional, Request For Procurement-based, competitions. Rather, the requirement is announced in the Commerce Business Daily with enough specificity to permit interested firms to submit their proposals, on special forms (Standard Form (SF) 255; the firm first submits an annual qualification on a form SF 254).

#### **7.7.3.2 Construction**

Construction contracts are simply contracts which have as a (not necessarily, “the”) principal purpose, construction. They require several special clauses reflecting this purpose. Most notably, any construction contract in excess of a small threshold (\$2,000) will be subject to the Davis-Bacon Act, which establishes minimum wages to be paid to the individual construction trades used on the project, and requires a weekly report of wages paid, in great detail.

As a result of the Davis-Bacon Act requirements, construction contracts are potential administrative challenges. They usually involve the designing A&E firm as an inspection agent of the government, and often invoke numerous problems relating to delays or claims for additional costs.

#### **7.7.3.3 Information Technology**

Information Technology contracts cover more than just equipment. This is an area that has recently changed dramatically, as the decades-old statutes and regulatory structures have been discarded for a wholly new approach, that has yet to be seriously tested.

#### **7.7.3.4 Services**

Services contracts are a broad species, and are one of the fundamental types (as is the “supplies” type of contract). Services contracts involve the provision of labor, generally to accomplish a particular specified purpose (lawn mowing, data entry, etc.).

A major sub-category of services contracts are those subject to the Service Contract Act (SCA). Such contracts incorporate special provisions and, usually, a “wage determination” which sets forth minimum wages to be paid to various categories of labor.

While it does not require the administrative efforts of the Davis-Bacon Act, the SCA can cause contractors some problems. These are generally related to determining appropriate classifications of labor for individuals who typically perform numerous tasks, crossing over such categories. The wage rates in such determinations can also be artificially high for a given area (they are supposed to be based on local labor union agreements).

#### **7.7.3.5 Research and Development (R&D)**

R&D contracts are of particular interest in two areas. These are performance definition and intellectual property.

It should be obvious that, given the nature of research, contractors will usually have trouble guaranteeing an outcome. So research contracts are generally structured with mechanisms allowing definable increments of effort to be undertaken. Frequently, this involves phases with reports being the deliverable product, along with recommendations for additional effort.

The other area of general concern in R&D contracting is who has ownership of intellectual property that results from the effort. The normal expectation is that the organization paying for the research will own the intellectual property; however, based on the terms of the contract, the contractor may maintain the intellectual property.

#### **7.7.4 Ordering Types of Contracts**

Contracts are frequently written to support an organization's needs over a period of time, without specific information as to the totality of those needs. For these purposes, a large variety of ordering types have been developed.

Such contract types also serve to support the needs of subsidiary organizations which may not have the internal resources (and concomitant authority) to acquire specific goods or services over a specific value by a local, independent contract, but can do so by ordering against an appropriate contract vehicle written by a different contracting agency.

One common instance of the latter circumstance is the General Services Administration (GSA) "Schedule," or "Schedule Contract." There are a wide variety of these, covering most of the commonly used commodities within the government.

Several of the variations on ordering types of contracts include:

- Indefinite Delivery/Indefinite Quantity Contracts.
- Federal Supply Schedule Contracts.
- Requirements Contracts.
- Blanket Purchase Agreements.

##### **7.7.4.1 Indefinite Delivery/Indefinite Quantity (IDIQ)**

This type of contract is established to permit agencies to meet their needs through delivery orders for particular items over a period of time, rather than through individual formal (and typically, competitive) contracting actions.

Occasionally, there are indefinite delivery contracts that have a definite quantity, but generally both elements are indefinite.

Two aspects of the contract are important. The first is that it must have explicit information concerning how (and by whom) orders can be placed. The second is that it must have either a commitment to a minimum quantity (often ten percent of the estimated value) to be ordered, or it must contain a promise to order all relevant needs under the agreement (this is called a "Requirements" contract, and is discussed below).

Without one of these two elements, the "contract" will fail for lack of consideration, and the contractor would have the right to decline to accept any particular order.

Depending upon circumstances, such contracts often contain provisions limiting the order levels (to protect the contractor from unreasonably large demands over a short period of time, as well as the less altruistic thought that such large orders should be less profitable to the vendor).

#### **7.7.4.2 Federal Supply Schedule Contracts**

The Federal Supply Schedule is actually a set of hundreds of contracts and agreements, established and administered (for the most part) by the GSA (an exception: pharmaceuticals and some other hospital supplies are the responsibility of the Veterans' Administration).

From the (Government) user's point of view, the Supply Schedules provide access to a wide variety of commodities, ranging from stationery and common hand tools to mainframe computers. The Schedule contracts are categorized in two ways: they are either mandatory or non-mandatory, and they are either single- or multiple-source.

A specific schedule (the term may encompass multiple contracts) may be mandatory for one government agency, and non-mandatory for another. If a schedule is mandatory for an agency, it must use the schedule to satisfy its needs for the materials on that schedule. If it is non-mandatory (essentially always true for components of the DoD), the agency may or may not choose to utilize the schedule.

If the schedule contract is single-source, then only one contractor provides the given item through GSA; if multiple-source, then many contractors are included for the schedule item, and the agency (if the schedule is mandatory for them) must essentially shop among the schedule vendors.

Negotiating a schedule contract with GSA can be an extremely difficult, or surprisingly easy, exercise. GSA is known for demanding the lowest price offered to any customer, regardless of circumstances, and this fact often causes significant documentation difficulties. It should also be understood that, generally, obtaining a schedule contract merely establishes a vehicle for future ordering, and that the contracts as such may not contain any commitment to a sales level. Nonetheless, for commodities classified as "mandatory" in the schedule system, they are essentially the only available route for marketing to the civilian agencies of the government.

#### **7.7.4.3 Requirements Contracts**

A requirements contract is a subspecies of an IDIQ contract. It is different in that the only promise made by the government is that it will use the contract to order all its needs for the supply or service covered by the contract, if it has any such needs. There is no promise to order anything, unless that need arises.

This structure has an interesting legal consequence. It can have the effect of reducing the impact of a standard clause, "Termination for Convenience" (T for C). This clause is required in every government contract, and in fact is included by action of law. It says that the government can cancel the contract without fault of the contractor, and without cost except for payment for performance to date and profit on that payment. (This is very different from the commercial environment, where the measure of damages for such cancellation would include the entirety of anticipated profit.) The real value of the clause to the government has been that, even where it would otherwise have breached the contract, it has always been able to say "well, worst case, we

had the right to exercise a termination for convenience and therefore our only damages are limited by that clause.”

In a requirements contract, it has been determined that an attempt to rely on such a constructive termination for convenience is logically inappropriate, because it would destroy the underlying consideration of the contract--which is the authority for use of the clause in the first place. The result is that, in such contracts the government is uniquely constrained from restricting its damages by pointing to a “constructive T for C.”

#### **7.7.4.4 Blanket Purchase Agreements (BPA)**

This is actually not a “contract” in the legal sense, but rather establishes a structure for numerous individual sales, which when executed constitute a contract. BPAs are usually established to assist small organizational elements in making small purchases of commodities. The regulations encourage multiple BPAs for the same items, and selection among them on an informal basis. BPAs usually contain no funding (that is provided in individual orders), and simplified ordering (often oral), record keeping, and payment procedures are utilized. Many of the functions of BPAs may be overtaken by the expanded use of electronic commerce in the future, at least where the ordering organization has access to such capabilities.

#### **7.7.5 Total Environmental Restoration Contract (TERC)**

In order to better respond to the unique contract requirements for environmental studies and cleanups, USACE developed the TERC. TERCs are flexible, cradle-to-grave contracts which allow one contractor to provide full service hazardous waste cleanup services. Developed to meet the unique requirements of the hazardous waste cleanup services, TERCs shift the emphasis from studies to cleanups, and decrease contract solicitation time. TERCs allow effective sequencing of work, streamlined coordination, elimination of duplicate efforts, reduction of costly changes, resolution of site problems, and faster and more fluid on-site operations. TERCs do not replace traditional contracting tools, but are used for certain high priority, complex, time-sensitive cleanup requirements. Not every HTRW project is appropriate for TERC, and no one method is appropriate in all circumstances. TERC complements existing tools and complies with the Competition in Contracting Act.

## ABBREVIATIONS AND ACRONYMS

A&E	Architect and Engineering
ABO	Army Budget Office
ACSIM	Assistant Chief of Staff for Installation Management
AFARS	Army Federal Acquisition Regulation Supplement
AFP	Annual Funding Plan
AMC	Army Materiel Command
AMS	Army Management Structure
AR	Army Regulation
ARAR	Applicable or Relevant and Appropriate Requirement
ASA(IL&E)	Assistant Secretary of the Army for Installations, Logistics, and Environment
ATSDR	Agency for Toxic Substances and Disease Registry
BCA	Base Closure Account
BCP	Base Realignment and Closure Cleanup Plan
BCT	Base Realignment and Closure Cleanup Team
BD/DR	Building Demolition and Debris Removal
BEC	Base Realignment and Closure Environmental Coordinator
BES	Budget Estimate Submission
BPA	Blanket Purchase Agreements
BRAC	Base Realignment and Closure
BRAC ERP	Base Realignment and Closure Environmental Restoration Program
BRACO	Base Realignment and Closure Office
BTAG	Biological Technical Assistance Group
BTC	Base Realignment and Closure Transition Coordinator
CA	Cooperative Agreement
CBDCOM	U.S. Army Chemical Biological Defense Command
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CERFA	Community Environmental Response Facilitation Act
CFR	Code of Federal Regulations
CHF	Contaminant Hazard Factor
CICA	Competition in Contracting Act
COC	Chemical of Concern
CONUS	Continental United States
COR	Contracting Officer's Representative
CPAF	Cost Plus Award Fee
CPFF	Cost Plus Fixed Fee

## ABBREVIATIONS AND ACRONYMS

CPIF	Cost Plus Incentive Fee
CRA	Continuing Resolution Authority
CRP	Community Relations Plan
CTC	Cost-To-Complete
DA	Department of the Army
DASA(ESOH)	Deputy Assistant Secretary of the Army for Environment, Safety and Occupational Health
DD	Decision Document
DENIX	Defense Environmental Network and Information Exchange
DEP	Director of Environmental Programs
DERA	Defense Environmental Restoration Account
DERP	Defense Environmental Restoration Program
DESCIM	Defense Environmental Security Corporate Information Management
DFAS	Defense Financial Accounting System
DoD	Department of Defense
DPG	Defense Planning Guidance
DQO	Data Quality Objective
DSERTS	Defense Site Environmental Restoration Tracking System
DSMOA	Defense and State Memoranda of Agreement
DUSD(ES)	Deputy Under Secretary of Defense for Environmental Security
EA	Environmental Assessment
EBS	Environmental Baseline Survey
ECAP	Environmental Compliance Assessment Program
ECOP	Environmental Condition of Property
EE/CA	Engineering Evaluation and Cost Analysis
EFARS	Engineer Federal Acquisition Regulation Supplement
EIS	Environmental Impact Statement
EPR	Environmental Program Requirement
ER,A	Environmental Restoration, Army
ERA	Ecological Risk Assessment
ERP	Environmental Restoration Program
FACNET	Federal Acquisition Computer Network
FAD	Funding Authorization Document
FAR	Federal Acquisition Regulation
FARA	Federal Acquisition Reform Act
FASA	Federal Acquisition Streamlining Act
FFA	Federal Facility Agreement
FFP	Firm Fixed Price
FONSI	Finding of No Significant Impact
FORSCOM	U.S. Army Forces Command



## ABBREVIATIONS AND ACRONYMS (Continued)

FOSET	Finding of Suitability to Early Transfer
FOSL	Finding of Suitability to Lease
FOST	Finding of Suitability to Transfer
FPI	Fixed Price Incentive
FSP	Field Sampling Plan
FTC	Federal Track Coordinator
FUDS	Formerly Used Defense Sites
FY	Fiscal Year
FY97	Fiscal Year 1997
GAO	General Accounting Office
GO	General Officer
GOCO	Government Owned, Contractor Operated
HQ	Headquarters
HRS	Revised Hazard Ranking System
HSP	Health and Safety Plan
HTRW	Hazardous, Toxic and Radiological Waste
IAG	Interagency Agreement
IAP	Installation Action Plan
IC	Installation Commander
IDIQ	Indefinite Delivery/Indefinite Quantity
IGCE	Independent Government Cost Estimate
IIA	Initial Installation Assessment
IPR	In-Process Review
IRA	Interim Remedial Action
IRP	Installation Restoration Program
ISCP	Installation Spill Contingency Plan
KO	Contracting Officer
LBP	Lead Based Paints
LRA	Local Redevelopment Authority
LSI	Listing Site Inspection
MACOM	Major Army Command
MARKS	Modern Army Recordkeeping System
MCA	Military Construction, Army
MILCON	Military Construction
MOA	Memorandum of Agreement
MOM	Measure of Merit
MOU	Memorandum of Understanding

## ABBREVIATIONS AND ACRONYMS (Continued)

MPF	Migration Pathway Factor
MSC	Major Subordinate Command
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NDAA	National Defense Authorization Act
NEPA	National Environmental Policy Act
NGB	National Guard Bureau
NOID	Notice of Intent to Delete
NPL	National Priorities List
NRC	Nuclear Regulatory Commission
NTE	Not to Exceed
NTIS	National Technical Information Service
OMA	Operation and Maintenance Account
OB/OD	Open Burning/Open Detonation
ODEP	Office of the Director of Environmental Programs
ODUSD(ES)	Office of the Deputy Under Secretary of Defense for Environmental Security
OEW	Ordnance and Explosive Waste
OMB	Office of Management and Budget
OSC	On-Scene Coordinator
OSHA	Occupational Safety and Health Administration
OSWER	Office of Solid Waste and Emergency Response
OTSG	Office of the Surgeon General
OU	Operable Unit
PA/SI	Preliminary Assessment/Site Inspection
PAM	Pamphlet
PAO	Public Affairs Officer
PCB	Polychlorinated Biphenyl
PEAR	Project Accounting Report
PF	Problem Formulation
PO	Project Officer
POC	Point of Contact
POM	Program Objective Memorandum
PP	Proposed Plan
PR	Procurement Request
PRP	Potentially Responsible Party
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Program Plan

## ABBREVIATIONS AND ACRONYMS (Continued)

RA	Remedial Action
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
RD&D	Research, Development, and Demonstration
REM	Removal
RF	Receptor Factor
RFP	Request for Proposal
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RPM	Remedial Project Manager
RPMA	Real Property Maintenance Account
RRSE	Relative Risk Site Evaluation
RSC	Regional Support Command
S&A	Supervision and Administration
SACM	Superfund Accelerated Cleanup Model
SAF	Subject to Availability of Funds
SAFER	Streamlined Approach for Environmental Restoration
SAP	Sampling and Analysis Plan
SARA	Superfund Amendments and Reauthorization Act of 1986
SAT	Simplified Acquisition Threshold
SBA	Small Business Administration
SC	Site Close-out
SCA	Service Contract Act
SES	Senior Executive Service
SOC	Statement of Condition
SOP	Standard Operating Procedures
SOW	Statement (or Scope) of Work
SSI	Site Screening Inspection
SWDA	Solid Waste Disposal Act
SWMU	Solid Waste Management Unit
T&M	Time and Material
TAPP	Technical Assistance for Public Participation
TERC	Total Environmental Restoration Contract
TJAG	The Judge Advocate General
TOA	Total Obligation Authority
TRC	Technical Review Committee
TSD	Treatment, Storage or Disposal
T for C	Terminate for Convenience

## ABBREVIATIONS AND ACRONYMS (Continued)

USACE	U.S. Army Corps of Engineers
USACHPPM	U.S. Army Center for Health Promotion and Preventive Medicine
USAEC	U.S. Army Environmental Center
USEPA	U.S. Environmental Protection Agency
UST	Underground Storage Tank
UXO	Unexploded Ordnance
WES	Corps of Engineers Waterways Experimental Station

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## GLOSSARY

Administrative Record - Compilation of documents that records the decision-making process regarding the selection of a response action to be taken at a site.

Applicable Requirements - Cleanup standards, standards of control and other substantive environmental protection requirements, criteria or limitations promulgated under Federal or State law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location or other circumstances at a CERCLA site.

Baseline Risk Assessment - An evaluation of the potential threat to human health and the environment in the absence of any remedial action at a site.

BRAC - The environmental restoration portion of the Base Realignment and Closure Program (BRAC) was established to help identify, investigate, and cleanup contamination on installations identified for transfer or sale under the auspices of the Base Closure and Realignment Commission Report of December 1988. The process consists of the same three phases as the IRP:

Environmental Baseline Survey or PA/SI - to identify potential sites with hazardous waste contamination;

RI/FS - to determine the nature and extent of contamination at a site and to identify alternatives/recommend the best strategy for remediation or cleanup; and

RD/RA - to implement any remediation necessary prior to sale.

However, the BRAC environmental restoration program differs from the IRP since it also evaluates additional environmental issues such as asbestos, radon, transformers and underground storage tanks which must be addressed prior to transfer of property.

BCP Abstract - Executive summary of the BCP. The abstract facilitates the BCP updates and information tracking. The BCP Abstract may also be required for BRAC installations where a modified fast track program is in place.

BRAC Cleanup Plan - A comprehensive and consolidated status and strategy for expedited environmental cleanup at BRAC installation where a BRAC Cleanup Team has been established. The BCP is intended to be the BCT's roadmap for program execution. The BRAC Cleanup Plan is a living document which should be shared with the Restoration Advisory Board and community.

Bench Studies - Treatability tests performed on a small scale, usually in a laboratory, to better define parameters of a treatment technology.

CERCLA - Comprehensive Environmental Response, Compensation and Liability Act of 1980, also known as "Superfund." Amended in 1986 by the Superfund Amendments and Reauthorization Act.

Community Relations Plan - Document based on community interviews that specifies the community relations activities that the Army expects to undertake during a response action.

Contaminant - See Pollutant.

Contracting Officer - Individual with the authority to enter into, administer and/or terminate contracts and make related determinations and findings.

Contracting Officer's Representative - Individual trained to prepare procurement requests and monitor contractor performance. The Contracting Officer's Representative is not authorized to sign contracts or to make changes and modifications to a contract.

Data Quality Objectives - Quantitative and qualitative statements that specify the data needed to support decisions regarding remedial response activities.

Decision Document - Documentation of response action decisions for all actions at non-National Priorities List Sites and for interim response actions at National Priorities List sites.

Defense Environmental Restoration Program - Provides centralized program management for the cleanup of DoD hazardous waste sites consistent with the provisions of CERCLA. The goals of the program are: (1) the identification, investigation, research and development and cleanup of contamination from hazardous substances, pollutants and contaminants; (2) correction of other environmental damage which creates an imminent and substantial endangerment to the public health, welfare or to the environment; and (3) demolition and removal of unsafe buildings and structures.

Defense State Memorandum of Agreement - The program developed to involve States and Territories in the cleanup of DoD installations in compliance with CERCLA. States are reimbursed for their actions in support the DERP process.

Ecological Risk Assessment - The process to evaluate the likelihood that adverse ecological effects are occurring or may occur in site plant and animals, as a result of chemical, physical, or biological influences.

Environmental Restoration, Army Account - A transfer account that funds the Army Installation Restoration Program for active installations.

Executing Agency - The agency responsible for administering IRP activities for a site or installation.

Facility (as stated in CERCLA) - Any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, aircraft or any site or area where a hazardous substance has been deposited, stored, disposed of, placed or otherwise come to be located; but does not include any consumer product in consumer use or any vessel.

Facility (as stated in this Guidance Manual) - This term has been replaced by the terms "installation" and "site." See Section 1.6.1.

Feasibility Study - A study undertaken to develop and evaluate alternatives for remedial action.

Federal Agency Hazardous Waste Compliance Docket - A list, maintained by the U.S. Environmental Protection Agency of Federal hazardous waste treatment, storage, disposal and spill sites. The Docket includes information submitted by Army installations under Sections 3005, 3010, and 3016 of the Solid Waste Disposal Act and Sections 103 and 120 of CERCLA.

Field Sampling Plan - Document that provides guidance for all field work by defining in detail the sampling and data-gathering methods to be used on a project. Part of the Sampling and Analysis Plan that is prepared prior to any non-emergency site sampling activities.

Hazard Ranking System - Method used by the U.S. Environmental Protection Agency to identify sites for inclusion on the National Priorities List, and to prioritize National Priorities List sites for funding by Superfund. The original HRS was revised in December 1991 and is now referred to as HRS2.

Hazardous Substance (as stated in CERCLA) - Any substance designated pursuant to Section 311(b)(2)(A) of the Clean Water Act; any element, compound, mixture, solution or substance designated pursuant to Section 102 of CERCLA; any hazardous wastes having the characteristics identified under or listed pursuant to Section 3001 of the Solid Waste Disposal Act (but not including any waste the regulation of which under the Solid Waste Disposal Act has been suspended by Act of Congress); any toxic pollutant listed under Section 307(a) of the Clean Water Act; any hazardous air pollutant listed under Section 112 of the Clean Air Act; and any imminently hazardous chemical substance or mixture with respect to which the EPA Administrator has taken action pursuant to Section 7 of the Toxic Substances Control Act. The term does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance in the first sentence of this paragraph, and the term does not include natural gas, natural gas liquids, liquified natural gas or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas.)

Health Assessment - Assessment of existing risk to human health posed by National Priorities List sites, prepared by the Agency for Toxic Substances and Disease Registry.

Human Health Risk Assessment - Characterizes the nature and extent of potential adverse impacts from contaminants found in the air, soils, and/or water at the site. The risk assessment process synthesizes available data on exposure of specified receptors and the toxicity of contaminants to estimate the associated risk to human health.

Imminent Threat - For the purposes of the Army IRP, a threat is imminent if human exposure in excess of applicable human health criteria is predictable prior to implementation of an effective final remedial action or operable unit.

Information Repository - Place where documents and information pertaining to response action sites will be stored and made available for public inspection and copying.

Installation - The real property owned or leased by the Army including a main base and any associated real properties under the control of an Installation Commander.

Installation Action Plan - Outlines the total multi-year integrated, coordinated approach to achieving an installation's restoration goals. The Installation Action Plan is a living document which can be provided to the Technical Review Committee or Restoration Advisory Board members.

Institutional Controls - Those actions that an Installation Commander can take to limit access to areas of contamination.

Interagency Agreement - Written agreement between the Army and the U.S. Environmental Protection Agency required in conjunction with selection of remedial actions for sites that are on the National Priorities List and for sites that caused an installation to be listed. The agreement includes a schedule for completion of each remedial action and arrangements for long-term operation and maintenance of the site. Many Interagency Agreements include a state agency as a third part to the agreement. Also referred to as a Federal Facility Agreement.

Management of Migration - Actions that are taken to minimize and mitigate the migration of hazardous substances, pollutants or contaminants and the effects of such migration. Measures may include, but are not limited to, provision of alternative water supplies, management of a plume of contamination or restoration of a drinking water aquifer.

National Contingency Plan - Plan established by CERCLA that provides for efficient, coordinated and effective response to discharges of oil and releases of hazardous substances, pollutants and contaminants in accordance with CERCLA and the Clean Water Act. Its full title is "National Oil and Hazardous Substance Pollution Control Plan" and is found at 40 CFR 300.

National Priorities List - A list, compiled by the U.S. Environmental Protection Agency, of high priority sites, identified primarily by Hazard Ranking System score, for remediation under CERCLA.

Natural Attenuation - The naturally occurring processes in soil and groundwater environments that act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in those media.

Operable Unit (as stated in the National Contingency Plan) - A discrete portion of a remedial response that by itself eliminates or mitigates a release, threat of a release or pathway of exposure and that requires no additional action to accomplish its objective. The cleanup of a site can be divided into a number of operable units, depending on the complexity of the problems associated with the site. Operable units may consist of any set of actions performed over time or any actions that are concurrent but located in different parts of a site.

Operation and Maintenance (O&M) - Activities required to maintain the effectiveness of response actions.

On-Scene Coordinator (as stated in the National Contingency Plan) - Federal official predesignated by the U.S. Environmental Protection Agency or the U.S. Coast Guard to coordinate and direct Federal responses under Subpart D (Operational Response Phases for Oil Removal), or the official designated by the lead agency to coordinate and direct removal actions under Subpart E (Hazardous Substance Response), of the National Contingency Plan.

Pilot Studies - Treatability tests performed on a large scale to simulate the physical, as well as chemical, parameters of a treatment process.

Pollutant and Contaminant (as stated in the National Contingency Plan) - Any element, substance, compound or mixture, including disease-causing agents, which after release into the environment and upon exposure, ingestion, inhalation or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformations, in such organisms or their offspring. The term does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under Section 101(14)(a) through (f) of CERCLA, nor does it include natural gas, liquified natural gas or synthetic gas of pipeline quality (or mixtures of natural gas and such synthetic gas). For purposes of Subpart E (Hazardous Substance Response) of the National Contingency Plan, the term pollutant or contaminant means any pollutant or contaminant that may present an imminent and substantial danger to public health or welfare.

Potency Factor - The lifetime cancer risk for each additional mg/kg body weight per day of exposure.

Potentially Responsible Party - Current and former owners or operators and persons who may be accountable for having generated hazardous substances or were involved in transport, treatment or disposal of hazardous substances at a site under litigation.

Preliminary Assessment - Initial analysis of existing information to determine if a release may require additional investigation or action.

Presumptive Remedies - Preferred cleanup technologies for common categories of sites having similar characteristics, and are based on past experience in site remediation, as well as the USEPA's scientific and engineering evaluation of performance data on technology implementation.

Quality Assurance Project Plan (as stated in the National Contingency Plan) - A written document, associated with remedial site sampling activities, which presents in specific terms the organization (where applicable), objectives, functional activities, and specific quality assurance and quality control activities designed to achieve the data quality goals of a specific project or continuing operation. The quality assurance project plan is prepared for each specific project or continuing operation (or group of similar projects or continuing operations). Part of the Sampling and Analysis Plan that is prepared prior to any non-emergency site sampling activities.

Record of Decision - Documentation of a final remedial response action decision at a National Priorities List site.

Reference Dose - For noncarcinogenic effects, the amount of a chemical that can be taken into the body each day over a lifetime without causing adverse effects.

Release (as stated in CERCLA) - Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment (including the abandonment or discarding of barrels, containers and other closed receptacles containing any hazardous substance or pollutant or contaminant), but excludes (A) any release which results in exposure to persons solely within a workplace, with respect to a claim which such persons may assert against the employer of such persons, (B) emissions from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel, or pipeline pumping station engine, (C) release of source, byproduct, or special nuclear material from a nuclear incident, as those terms are defined in the Atomic Energy Act of 1954, if such release is subject to requirements with respect to financial protection established by the Nuclear Regulatory Commission under Section 170 of such Act or, for the purposes of Section 104 of this title or any other response action, any release of source byproduct, or special nuclear material from any processing site designated under Section 102(a)(1) or 302(a) of the Uranium Mill Tailings Radiation Control Act of 1978, and (D) the normal application of fertilizer.



Relevant and Appropriate Requirements - Cleanup standards, standards of control and other substantive environmental protection requirements, criteria or limitations promulgated under Federal or State law, while not applicable to a hazardous substance, pollutant, contaminant, remedial action, location or other circumstances at a site, address problems or situations sufficiently similar to those encountered at the site that their use is well suited to the particular site.

Remedial Action or Remedy (as stated in CERCLA) - Actions consistent with permanent remedy taken instead of or in addition to removal actions in the event of a release or threatened release of a hazardous substance into the environment, to prevent or minimize the release of hazardous substances so that they do not migrate to cause substantial danger to present or future public health or welfare or the environment. The term includes, but is not limited to, such actions at the location of the release as storage, confinement, perimeter protection using dikes, trenches, or ditches, clay cover, neutralization, cleanup of released hazardous substances and associated contaminated materials, recycling or reuse, diversion, destruction, segregation of reactive wastes, dredging or excavations, repair or replacement of leaking containers, collection of leachate and runoff, on-site treatment or incineration, provision of alternative water supplies and any monitoring reasonably required to assure that such actions protect the public health and welfare and the environment. The term includes the costs of permanent relocation of residents and businesses and community facilities where the President determines that, alone or in combination with other measures, such relocation is more cost-effective than and environmentally preferable to the transportation, storage, treatment, destruction or secure disposition off site of hazardous substances, or may otherwise be necessary to protect the public health or welfare; the term includes off site transport and off site storage, treatment, destruction, or secure disposition of hazardous substances and associated contaminated materials.

Remedial Action Process - Identification, evaluation, decision-making and design and construction steps required to implement control measures. The remedial action process may lead to remedial actions, removals or decisions to take no further action.

Remedial Design - Technical analysis and procedures which follow the selection of remedy for a site and result in a detailed set of plans and specifications for implementation of the remedial action.

Remedial Investigation - Process undertaken to determine the nature and extent of the problem presented by a release which emphasizes data collection and site characterization. The remedial investigation is generally performed concurrently and in an interdependent fashion with the feasibility study.

Removal (as stated in CERCLA) - The cleanup or removal of released hazardous substances from the environment, such actions as may be necessary taken in the event of the threat of release of hazardous substances into the environment, such actions may be necessary to monitor, assess and evaluate the release or threat of release of hazardous substances, the disposal of removal material, or the taking of such other actions as may be necessary to prevent, minimize or mitigate damage to the public health or welfare or to the environment, which may otherwise result from a release or threat of release. The term includes, in addition, without being limited to, security fencing or other measures to limit access, provision of alternative water supplies, temporary evacuation and housing of threatened individuals not otherwise provided for, action taken under Section 104(b) of this Act and any emergency assistance which may be provided under the Disaster Relief Act of 1974.

Response Action – An action involving either a short-term removal action or a long-term removal response that may include, but is not limited to, removing hazardous materials from a site for treatment or containment; containing the waste safely on-site; treating the waste safely on-site; treating the waste on-site; and identifying and removing the source of contamination and halting further migration of contaminants.

Restoration Advisory Board – The Restoration Advisory Boards are replacing Technical Review Committees. The Restoration Advisory Board is a forum of representatives of the DoD, USEPA, State and local governments, and public representatives of the potentially affected community. Members can provide input to the DoD's environmental restoration program at operating or Base Realignment and Closure installations.

Sampling and Analysis Plan - Document composed of a Quality Assurance Project Plan and Field Sampling Plan that is prepared prior to site sampling activities.

Site (as stated in this Guidance Manual) - A location on an installation where hazardous wastes have been stored, disposed, spilled or otherwise released to the environment. A site includes land and water resources where they are contaminated by the release, and it includes any structures, earth works or equipment that are clearly associated with the release. Where multiple sites may contribute to contamination of an aquifer or a common land area, the contaminated resource may be identified as a site that is distinguished from the sites where the releases occurred. A site is the basic unit for planning and implementing response actions.

Site Close-out – When all phases of the remedial activities at a site have been completed and no further action is warranted, the site will enter the Site Close-out Phase.

Site Health and Safety Plan - Document that specifies policies and procedures for ensuring the health and safety of personnel working at a site.

Site Inspection - On-site inspection to determine whether there is a release or potential release and the nature of the associated threats. The purpose is to augment the data collected in the preliminary assessment and to generate, if necessary, sampling and other field data to determine if further action or investigation is appropriate.

Source Control - Actions that either remove the source of contamination off-site or effectively contain it on-site so that continuing releases are prevented or reduced.

Technical Assistance for Public Participation - If members of a Technical Review Committee or Restoration Advisory Board become dissatisfied with the Army's ability to provide technical support, the members may seek independent technical assistance to contribute to the public's ability to participate in the restoration program. The Army provides funding for Technical Assistance for Public Participants.

Technical Review Committee - Committee composed of Army and EPA officials, State and local authorities and a public representative of the potentially affected community that reviews and comments on response actions and proposed actions at Army sites on or proposed for the National Priorities List or other major sites (sites that present a significant threat to human health, welfare or the environment or cause public controversy).

Third Party Site - Privately or municipally owned storage, treatment and disposal sites that received hazardous wastes either from disposal contractors hired by the Army or directly from the Army. The Army, as a potentially responsible party, is designated as the third party in cases where enforcement actions to recover costs of cleanup is initiated. EPA, as the first party, cannot sue the Army to recover such costs, but non-Federal potentially responsible parties, as the second party, can.

To Be Considered Requirements - Non-promulgated advisories (such as reference doses or potency factors), criteria and guidance issued by Federal and State governments that are identified to supplement applicable or relevant and appropriate requirements.

# INDEX

## A

Acquisition.....	1-13, 6-9, 7-3, 7-5, 7-8, 7-18, 7-19, 7-21
Administrative Record(s).....	2-1, 2-8, 3-17, 3-34, 3-47, 4-3, 5-1, 5-2, 5-3, 5-4, 5-5, 5-6, 5-7, 5-9
Agency for Toxic Substances and Disease Registry (ATSDR).....	1-10, 1-11, 2-7, 2-10, 2-12, 3-17, 4-7, 4-19, 4-46, 4-47, 5-4, 6-4, 6-5
Annual Funding Plan (AFP).....	6-5, 6-6, 6-10, 6-13
Annual Report to Congress.....	2-6, 5-20, 6-2, 6-13
Applicable or Relevant and Appropriate Requirement(s) (ARAR(s)).....	1-1, 1-18, 3-16, 3-17, 3-19, 3-25, 3-26, 3-28, 3-29, 3-31, 3-35, 3-38, 3-40, 4-4, 4-6, 4-7, 4-32, 4-33, 4-34, 4-35, 4-36, 4-37, 4-51, 4-52
Approvals.....	2-13, 2-14, 2-15, 4-2, 4-4, 5-8, 5-16, 5-17, 7-12
Architect and Engineering (A&E).....	7-1-4, 7-15, 7-16, 7-22, 7-29, 7-30
Army Budget Office (ABO).....	6-5, 6-6, 6-10
Army Regulations (AR).....	1-14, 1-15, 1-16, 2-3, 2-11, 3-11, 3-13, 3-17, 3-26, 4-16, 4-22, 4-24, 4-48, 5-27, 5-28
Assistant Chief of Staff for Installation Management (ACSIM).....	2-4, 2-7, 2-13, 2-14, 3-45, 4-4, 4-6, 4-49, 4-50, 6-4, 6-5, 6-6, 6-11, 6-13
Assistant Secretary of the Army for Installations, Logistics, and Environment (ASA(IL&E)).....	2-3

## B

Base Closure Account(s) (BCA(s)).....	1-7, 1-9, 1-10, 1-12, 1-13, 3-1, 3-31, 4-8, 4-10, 4-20, 4-49, 6-1, 6-2, 6-5, 6-7, 6-8, 6-9, 6-12, 7-13, 7-21
Baseline Risk Assessment.....	3-9, 3-14, 3-17, 3-19, 3-21, 3-29, 4-36, 4-37, 4-38, 4-39, 4-40, 4-48, 7-10
Base Realignment and Closure (BRAC)	
BRAC Cleanup Plan(s) (BCP(s)).....	1-6, 1-7, 1-8, 2-6, 2-7, 4-6, 4-9, 4-18, 4-51, 5-18, 5-19, 5-20, 6-1, 6-2, 6-13
BRAC Cleanup Plan (BCP) Abstract(s).....	1-8, 2-6, 2-7, 4-9, 4-18, 4-51, 5-18, 5-19, 6-1, 6-2, 6-13
BRAC Cleanup Team (BCT).....	1-7, 1-8, 2-11, 5-18, 5-19, 6-2
BRAC Environmental Coordinator (BEC).....	2-7, 2-10, 2-12, 2-13, 3-31, 3-37, 4-4, 4-9, 4-51, 5-8, 5-9, 5-19, 7-1, 7-2, 7-4, 7-7, 7-8, 7-10, 7-14, 7-15
BRAC Environmental Restoration Program (BRAC ERP).....	1-1, 1-2, 1-5, 1-8, 1-9, 1-15, 2-3, 2-5, 2-6, 2-9, 2-10, 2-12, 2-13, 3-1, 3-3, 3-6, 3-42, 3-47, 4-1, 4-5, 4-10, 4-16, 4-19, 4-20, 4-50, 4-52, 6-1, 6-2, 6-3, 6-4, 6-5, 6-6, 6-10, 6-11, 6-13, 7-1, 7-2, 7-3, 7-7, 7-11, 7-12, 7-22
BRAC Fast Track Cleanup.....	1-6, 1-7
BRAC Work Plan.....	2-4, 4-3, 6-5, 6-6, 6-8, 6-10, 6-11, 7-7
Biological Technical Assistance Group (BTAG).....	4-42
Blanket Purchase Agreement(s) (BPA(s)).....	7-20, 7-31, 7-33
Bottom-up Review (BUR).....	5-18
Building Demolition and Debris Removal (BD/DR).....	1-12, 6-4

## C

Code of Federal Regulations (CFR).....	1-1, 1-3, 1-4, 1-18, 3-1, 3-28, 3-31, 3-34, 4-16, 4-23, 4-49, 5-27
Community Environmental Response Facilitation Act (CERFA).....	1-13, 2-3, 3-32, 4-2, 5-27, 5-28,
Community Relations Plan (CRP).....	2-8, 3-9, 3-17, 3-31, 3-36, 4-15, 4-22, 5-6, 5-7, 5-9, 6-8
Compliance Docket.....	3-6, 3-9, 4-1, 5-13, 6-8

## INDEX (Continued)

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).....	1-1, 1-2, 1-3, 1-4, 1-8, 1-9, 1-10, 1-11, 1-12, 1-13, 1-15, 1-17, 2-1, 2-2, 2-3, 2-10, 2-13, 2-15, 3-1, 3-6, 3-12, 3-16, 3-17, 3-32, 3-37, 3-38, 3-39, 3-40, 3-46, 4-1, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7, 4-11, 4-16, 4-17, 4-18, 4-20, 4-22, 4-32, 4-33, 4-34, 4-36, 4-42, 4-46, 4-48, 4-52, 5-1, 5-6, 5-7, 5-13, 5-26, 5-27, 5-29, 5-30, 5-32, 6-4, 6-5
Continuing Resolution Authority (CRA).....	2-5
Contracting .....	2-11, 2-12, 4-1, 6-11, 7-1, 7-2, 7-3, 7-17, 7-18, 7-19, 7-33
Contracting Officer (KO) .....	2-11, 3-37, 4-1, 6-9, 6-11, 6-12, 7-1, 7-2, 7-4, 7-5, 7-6, 7-7, 7-8, 7-10, 7-11, 7-12, 7-13, 7-14, 7-15, 7-17, 7-21, 7-22
Contracting Officer's Representative (COR).....	3-37, 4-21, 5-9, 5-10, 5-12, 6-12, 7-1, 7-2, 7-3, 7-4, 7-5, 7-6, 7-7, 7-8, 7-9, 7-10, 7-11, 7-12, 7-13, 7-14, 7-15, 7-21, 7-2
Cooperative Agreement(s) (CA(s)) .....	1-4, 1-18, 4-7, 4-8, 4-9, 4-10, 4-19, 6-4, 6-5
Corrective Actions .....	1-11, 2-13, 4-6, 4-7, 4-11, 4-31
Cost Plus Award Fee (CPAF).....	7-23, 7-27, 7-28
Cost Plus Fixed Fee (CPFF) .....	7-23, 7-26, 7-27
Cost Plus Incentive Fee (CPIF) .....	7-23, 7-27, 7-28
Cost-to-Complete (CTC) .....	2-5, 2-8, 4-21, 4-50, 5-15, 5-20, 5-32, 6-1, 6-2, 6-3, 6-6, 6-13
<b>D</b>	
Data Quality Objectives (DQO).....	4-24, 4-25, 4-26, 4-27, 4-28, 4-29
Davis-Bacon Act.....	2-2, 7-15, 7-29, 7-30
Decision Document(s) (DD(s)).....	1-15, 2-6, 2-8, 2-10, 2-13, 2-14, 3-16, 3-19, 3-31, 3-32, 3-35, 3-37, 3-39, 3-43, 3-45, 3-46, 4-1, 4-2, 4-3, 4-4, 4-16, 4-19, 4-48, 5-4, 5-7, 5-8, 5-9, 5-21, 5-22, 5-29, 6-7, 7-2, 7-8, 7-10, 7-15
Defense and State Memoranda of Agreement(s) (DSMOA(s)).....	1-10, 2-3, 2-4, 2-8, 2-10, 4-7, 4-8, 4-10, 5-14, 6-4, 6-5
Defense Environmental Network and Information Exchange (DENIX).....	5-14, 5-15, 5-23
Defense Environmental Restoration Account (DERA) .....	1-3, 1-9
Defense Environmental Restoration Program (DERP).....	1-1, 1-2, 1-3, 1-9, 1-10, 1-11, 1-12, 2-3, 4-7, 4-8, 4-10, 5-26, 5-27, 6-7, 6-13
Defense Financial Accounting System (DFAS) .....	2-5, 2-9, 2-12, 6-6, 6-7, 6-8, 6-9, 6-10, 6-11
Defense Planning Guidance (DPG) .....	6-3, 6-10,
Defense Site Environmental Restoration Tracking System (DSERTS) .....	2-5, 2-7, 2-8, 4-6, 5-8, 5-14, 5-15, 5-17, 5-18, 5-20, 5-21, 5-22, 5-23, 5-24, 5-27, 5-32, 6-1, 6-2, 6-3, 6-5, 6-8, 6-13
Deleting Parcels from NPL.....	3-46
Department of the Army (DA) (HQDA) .....	1-8, 1-14, 2-3, 2-4, 2-7, 2-13, 2-15, 3-13, 3-17, 3-26, 3-31, 3-39, 4-1, 4-3, 4-22, 4-24, 5-8, 5-27, 5-28, 6-4
Deputy Assistant Secretary of the Army for Environment, Safety and Occupational Health (DASA(ESOH)) .....	1-10, 2-3, 2-13, 2-14, 2-15, 3-31, 3-46, 4-6, 4-9, 4-21, 4-46, 6-9
Deputy Under Secretary of Defense for Environmental Security (DUSD(ES)).....	2-3, 4-9, 4-10, 4-18, 4-47, 5-16, 5-19, 5-26, 6-1, 6-3, 6-13
Director of Environmental Programs (DEP) .....	2-4, 3-36, 4-2, 4-34
Disbursement(s).....	6-12, 7-13
Docket (Federal Docket).....	3-6, 3-7, 5-13, 6-4, 6-8
<b>E</b>	
Ecological Risk Assessment (ERA).....	4-37, 4-42, 4-43, 4-45, 4-46, 4-48
Engineering Evaluation and Cost Analysis (EE/CA) .....	1-18
Environmental Assessment (EA).....	4-48
Environmental Baseline Survey (EBS).....	1-2, 1-14, 3-6, 3-9, 3-11, 5-7, 5-21, 5-27, 5-28, 5-29, 5-30
Environmental Condition of Property (ECOP).....	1-14, 2-15, 5-27, 5-30
Environmental Impact Statement (EIS).....	4-48, 4-49
Environmental Program Requirement Report (EPR) .....	5-17, 5-31, 5-32, 5-33
Environmental Restoration, Army Account (ER,A).....	1-3, 1-4, 1-7, 1-9, 1-11, 1-12, 1-13, 1-14, 3-1, 3-7, 3-31

## INDEX (Continued)

	4-3, 4-8, 4-20, 4-49, 5-15, 5-32, 6-1, 6-2, 6-4, 6-7, 6-8, 6-9, 6-12, 6-13, 7-13, 7-21
Executing Agency.....	3-32, 4-42, 5-9, 6-7
Executive Order 12580.....	1-3, 2-1

### **F**

Fast Track .....	1-6, 1-7, 1-15, 2-7, 6-2
Fast Track Coordinator (FTC).....	2-7, 2-10
Feasibility Study(ies) (FS(s)).....	1-10, 1-17, 2-15, 3-6, 3-9, 3-11, 3-12, 3-13, 3-14, 3-15, 3-16, 3-17, 3-18, 3-23, 3-25, 3-26, 3-27, 3-31, 3-32, 3-33, 3-34, 3-35, 3-36, 3-37, 3-38, 3-39, 3-40, 3-42, 3-43, 4-1, 4-2, 4-3, 4-4, 4-15, 4-16, 4-19, 4-24, 4-30, 4-35, 4-36, 4-37, 4-38, 4-47, 4-48, 5-1, 5-3, 5-7, 5-24, 7-8, 7-9, 7-10, 7-13, 7-14, 7-15
Federal Acquisition Regulation (FAR).....	7-5, 7-11, 7-17, 7-19
Federal Acquisition Streamlining Act (FASA).....	7-18
Federal Facility Agreement(s) (FFA(s)).....	1-4, 1-10, 1-18, 2-13, 2-14, 2-15, 3-32, 4-1, 4-3, 4-6, 5-4, 6-7
Field Sampling Plan (FSP) .....	4-30, 4-31,
Finding of No Significant Impact (FONSI).....	4-48
Finding of Suitability to Early Transfer (FOSET).....	1-13, 1-14, 5-7, 5-27, 5-28
Finding of Suitability to Lease (FOSL) .....	1-13, 1-14, 2-15, 5-7, 5-21, 5-22, 5-27, 5-30
Finding of Suitability to Transfer (FOST).....	1-14, 1-15, 2-15, 5-7, 5-21, 5-22, 5-27, 5-28, 5-29, 5-30
Firm Fixed Price (FFP).....	7-23, 7-25
Fixed Price Incentive (FPI).....	7-22, 7-23, 7-25
Formerly Used Defense Sites (FUDS).....	1-1, 1-2, 1-3, 1-4, 1-5, 2-4, 4-41, 5-14, 5-32, 6-3
Funding.....	1-3, 1-7, 1-13, 2-5, 4-51, 5-16, 5-22, 6-5, 6-6, 6-7, 6-8, 6-9, 6-11, 7-7
Funding Outlays .....	6-11

### **G**

Goals, Program .....	6-10
Government Owned, Contractor Operated (GOCO).....	7-7

### **H**

Hazard Ranking System, Revised (HRS) .....	1-10, 2-6, 3-9, 3-11, 3-13, 3-46, 4-1, 5-5, 5-21, 7-14
Hazardous Substance(s).....	1-11, 5-27
Hazardous Waste .....	3-6, 3-9, 4-1, 4-24, 4-46, 5-13, 6-4, 6-8
Hazardous, Toxic and Radiological Waste (HTRW) .....	2-11, 7-33
Health and Safety Plan (HSP).....	1-11, 2-10, 3-9, 3-13, 3-17, 3-26, 3-36, 4-22, 4-23, 4-24, 7-14
Human Health Risk Assessment (s).....	4-37, 4-38, 4-42, 5-8

### **I**

Imminent Threat .....	1-17
Indefinite Delivery/Indefinite Quantity (ID/IQ) .....	7-31, 7-32
Independent Government Cost Estimate (IGCE) .....	7-2, 7-7
Information Repository.....	5-6
Initial Installation Assessment(s).....	3-6, 4-1
In-Process Review(s) (IPR(s)).....	1-7, 2-3, 2-5, 3-17, 5-20, 6-2, 6-4, 6-5, 6-13
Installation Action Plan (IAP) .....	2-7, 4-6, 4-9, 4-18, 4-51, 5-8, 5-15, 5-16, 5-17, 5-20, 5-22, 6-1
Installation Commander (IC).....	1-14, 2-4, 2-6, 2-7, 2-9, 2-10, 2-11, 2-12, 2-13, 2-14, 2-15, 3-13, 3-16, 3-31, 3-37, 3-43, 3-45, 3-47, 4-1, 4-4, 4-5, 4-6, 4-10, 4-20, 4-21, 4-47, 4-48, 5-8, 5-9, 5-13, 5-16, 5-17, 6-1, 6-9, 7-1, 7-7, 7-21

## INDEX (Continued)

Institutional Control.....	3-43, 3-44, 5-30, 5-31
Interagency Agreement(s) (IAG(s)).....	1-4, 1-9, 1-10, 1-18, 2-10, 2-13, 2-15, 3-9, 3-16, 3-32, 4-1, 4-3, 4-6, 4-7, 4-8, 4-35, 4-46, 5-4, 5-9, 5-21, 5-22, 6-7, 7-10
Interim Remedial Action(s) (IRA(s)) .....	2-13, 3-42, 3-43, 4-3, 4-4, 4-29, 4-30, 4-36, 5-17
IRP Obligation Plan(s).....	2-4, 2-5, 2-8, 4-3, 6-4, 6-8, 6-9, 6-10, 6-11, 7-7
<b>L</b>	
Listing Site Inspection(s) (LSI(s)) .....	3-12, 3-13
Local Redevelopment Authority (LRA).....	1-15, 2-11, 3-32, 4-37, 5-18, 5-31
<b>M</b>	
Major Army Command(s) (MACOM) .....	1-11, 1-12, 2-4, 2-5, 2-6, 2-7, 2-9, 2-10, 2-13, 2-14, 2-15, 3-7, 3-13, 3-16, 3-17, 3-31, 3-36, 3-39, 3-40, 3-45, 3-46, 3-47, 4-1, 4-2, 4-3, 4-4, 4-6, 4-7, 4-9, 4-17, 4-21, 4-22, 4-34, 4-50, 4-51, 4-52, 5-2, 5-8, 5-9, 5-12, 5-14, 5-16, 5-17, 5-18, 5-20, 5-23, 5-30, 6-3, 6-4, 6-5, 6-6, 6-8, 6-10, 6-11, 6-13, 7-7
Measures of Merit (MOM) .....	5-20, 6-2
Memorandum of Agreement/Memorandum of Understanding (MOA/MOU).....	2-12, 2-13, 4-46, 4-47, 5-27
Military Construction (MILCON) .....	6-7
Military Construction, Army Account (MCA) .....	6-7
Military Ranges .....	1-15
Monitoring .....	3-3, 3-9, 3-36, 3-42, 3-43, 3-44, 7-3, 7-6, 7-10
<b>N</b>	
National Environmental Policy Act (NEPA).....	1-2, 1-6, 1-15, 1-18, 3-13, 3-17, 3-26, 4-16, 4-42, 4-48, 4-49, 5-7, 5-28, 6-6
National Guard Bureau (NGB) .....	2-4, 2-7
National Oil and Hazardous Substances Pollution Contingency Plan (NCP).....	1-1, 1-2, 1-3, 1-15, 1-16, 1-18, 1-19, 2-3, 2-11, 3-1, 3-7, 3-14, 3-26, 3-34, 3-36, 3-47, 4-2, 4-3, 4-4, 4-7, 4-11, 4-21, 4-32, 4-33, 4-34, 4-35, 4-36, 4-37, 5-1, 5-6, 5-7
National Priorities List (NPL).....	1-2, 1-9, 1-10, 1-18, 2-1, 2-2, 2-7, 2-10, 2-12, 2-13, 2-14, 2-15, 3-3, 3-9, 3-11, 3-12, 3-13, 3-16, 3-19, 3-31, 3-32, 3-45, 3-46, 3-47, 4-1, 4-2, 4-4, 4-6, 4-7, 4-35, 4-46, 5-4, 5-6, 5-7, 5-9, 5-13, 5-17, 5-21, 5-26, 5-32, 6-4, 6-5, 6-13
Natural Attenuation .....	3-26, 3-27, 3-36, 3-37, 3-40, 3-41, 3-42, 3-43, 3-44
Natural Resources Trustee .....	2-2, 3-9,
Notice of Intent to Delete (NOID) .....	3-46
<b>O</b>	
Obligation .....	1-7, 2-4, 2-5, 2-8, 4-3, 6-4, 6-5, 6-6, 6-8, 6-9, 6-10, 6-11, 6-12, 7-7
Obligation Plan(s).....	2-4, 2-5, 6-5, 6-11
Occupational Safety and Health Administration (OSHA) .....	4-22, 4-24
Office of Management and Budget (OMB) .....	1-18
Office of the Surgeon General (OTSG).....	1-17
On-Scene Coordinator (OSC) .....	7-13
Operable Units (OU(s)) .....	1-18, 3-3, 3-9, 3-34, 5-21, 5-22
Operation and Maintenance Account (OMA).....	3-7, 6-12
Ordnance and Explosive Waste (OEW) .....	1-5, 5-24
Outgrant .....	1-13
<b>P</b>	
Pamphlet, DA (PAM) .....	1-14, 2-15, 4-41, 5-27, 5-28
Peer Review (PR) .....	4-49, 4-50, 4-51, 4-52, 7-1, 7-4, 7-7, 7-8
Peer Review Team .....	4-51, 4-52
Polychlorinated Biphenyl(s) (PCB(s)).....	1-2, 1-5, 1-8, 5-28

## INDEX (Continued)

Potentially Responsible Party, Third Party Site(s) (PRP(s)).....	1-9, 1-12, 2-2, 5-4, 5-5, 5-24
Preliminary Assessment/Site Inspection(s) (PA/SI(s)) .....	1-11, 3-3, 3-6, 3-9, 3-11, 3-12, 3-13, 4-1, 4-7, 5-7, 5-13, 6-4, 7-14
Presumptive Remedy(ies) (PR(s)) .....	3-26, 3-36, 3-39, 3-40
Procurement Request(s).....	7-1, 7-8
Program Objective Memorandum (POM) .....	4-9, 6-5, 6-13
Project Accounting Report (PEAR).....	6-6
Proposed Plan(s) (PP(s)).....	3-31, 3-32, 4-2, 4-3, 4-6, 4-16, 4-37, 5-4, 5-7
Public Affairs Office (PAO) .....	4-2, 4-4, 5-6

### **Q**

Quality Assurance Program Plan (QAPP) .....	3-36, 4-30, 4-31,
Quality Assurance/Quality Control (QA/QC) .....	3-21, 3-42, 4-30, 7-13

### **R**

Range Rule .....	1-14, 1-15
RCRA Corrective Actions .....	4-6, 4-11
Real Property Maintenance Account(s) (RPMA(s)) .....	1-12, 1-13,
Record of Decision (ROD) .....	1-9, 2-6, 2-10, 2-13, 2-14, 3-16, 3-19, 3-31, 3-35, 3-37, 3-43, 3-46, 4-1, 4-2, 4-3, 4-4, 4-16, 4-19, 4-36, 4-37, 5-4, 5-5, 5-7, 5-21, 5-22, 5-29, 7-15
Relative Risk Site Evaluation(s) (RRSE(s)) .....	2-5, 2-11, 4-6, 4-19, 5-20, 5-21, 5-23, 5-24, 5-25, 5-26, 6-1, 6-2, 6-3, 6-8, 6-13
Remedial Action(s) (RA(s)) .....	1-5, 1-17, 1-18, 2-13, 2-14, 3-6, 3-9, 3-21, 3-29, 3-34, 3-36, 3-37, 3-43, 4-4, 4-21, 4-23, 4-24, 5-3, 5-6, 5-17, 7-16
Remedial Design(s) (RD(s)) .....	1-12, 2-8, 2-11, 3-6, 3-35, 3-36, 3-37, 4-3, 4-4, 4-5, 4-24, 4-35, 5-7, 7-8, 7-10, 7-15
Remedial Design(s)/Remedial Action(s) (RD/RA(s)) .....	3-6, 3-37, 4-3, 7-8, 7-10
Remedial Investigation(s) RI(s).....	1-10, 1-17, 3-6, 3-9, 3-11, 3-12, 3-13, 3-14, 3-15, 3-16, 3-17, 3-18, 3-19, 3-23, 3-26, 3-27, 3-29, 3-32, 3-33, 3-34, 3-35, 3-36, 3-38, 3-39, 3-42, 3-43, 4-1, 4-2, 4-15, 4-16, 4-19, 4-23, 4-24, 4-30, 4-35, 4-36, 4-37, 4-38, 4-45, 4-46, 4-47, 4-48, 5-1, 5-3, 5-7, 5-24, 7-8, 7-9, 7-10, 7-13, 7-14
Remedial Project Manager(s) (RPM(s)) .....	2-7, 2-10, 2-12, 2-13, 3-31, 3-37, 3-40, 4-4, 4-9, 4-42, 4-47, 4-51, 5-8, 5-9, 5-26, 7-1, 7-2, 7-4, 7-7, 7-8, 7-10, 7-14, 7-15
Removal(s) (REM(s)) .....	1-17, 1-18, 2-13, 3-3, 3-9, 3-38, 3-39, 4-3, 4-5, 4-21, 4-30, 4-36, 4-47, 5-3, 5-4, 5-8, 5-17, 7-13
Report Documentation Page (Standard Form (SF) 298).....	5-12, 7-12
Request for Proposal(s) (RFP(s)).....	7-8, 7-25
Research, Development, and Demonstration (RD&D).....	1-12, 2-8, 2-11, 3-7, 7-29, 7-30
Resource Conservation and Recovery Act (RCRA) .....	1-1, 1-3, 1-4, 1-5, 1-8, 1-11, 1-13, 1-14, 1-15, 1-16, 2-10, 2-13, 3-1, 3-6, 3-7, 3-40, 4-2, 4-6, 4-7, 4-11, 4-33, 4-34, 4-41, 4-42, 4-52, 5-4, 5-13, 5-32
Responsiveness Summary .....	3-31, 4-2, 4-3, 5-8
Restoration Advisory Board(s) (RAB(s)) .....	1-10, 2-8, 3-9, 3-17, 4-2, 4-7, 4-15, 4-16, 4-17, 4-18, 4-19, 4-20, 4-21, 4-34, 5-3, 5-9, 5-16, 5-17, 5-18, 5-21, 5-22, 5-23, 6-4, 6-5, 6-8, 6-9, 7-21, 7-22

### **S**

Sampling and Analysis Plan(s) (SAP(s)).....	3-9, 3-13, 3-17, 3-19, 3-26, 3-43, 4-23, 4-29, 4-30, 5-3, 7-14
Screening Site Inspection(s) (SSI(s)).....	3-12, 7-14
Simplified Acquisition Procedure(s) .....	4-21, 7-3, 7-18, 7-19, 7-20, 7-21
Site Inspection(s) (SI(s)).....	1-18, 3-6, 3-9, 3-11, 3-12, 3-13, 4-19, 4-23, 4-24, 5-13, 5-24, 7-13, 7-14
Site Close-out(s) (SC(s)).....	2-7, 3-3, 3-6, 3-9, 3-13, 3-19, 3-42, 3-43, 3-45, 3-46, 3-47
Solid Waste Disposal Act (SWDA).....	1-3
Solid Waste Management Unit(s) (SWMU(s)).....	1-3, 1-4, 1-11, 1-16



## INDEX (Continued)

Standard Operating Procedure(s) (SOP(s)).....	4-23
Statement of Work (SOW) .....	3-17, 4-20, 7-2, 7-4, 7-5, 7-6, 7-7, 7-8, 7-9, 7-12, 7-14, 7-15
Streamlined Approach for Environmental Restoration (SAFER).....	4-25
Superfund Accelerated Cleanup Model (SACM).....	3-39
Superfund Amendments and Reauthorization Act (of 1986) (SARA) .....	1-1, 1-2, 1-9, 1-11, 1-12, 1-13, 2-3, 3-1, 5-32, 6-13

### *T*

Technical Assistance for Public Participation (TAPP) .....	2-8, 4-19, 4-20, 4-21, 5-3, 6-9, 7-21, 7-22
Technical Review Committee(s) (TRC(s)) .....	1-10, 2-8, 3-9, 3-17, 4-2, 4-7, 4-15, 4-16, 4-17, 4-19, 4-20, 4-21, 4-34, 5-9, 6-4, 6-5, 6-8, 6-9, 7-21, 7-22
The Judge Advocate General (TJAG) .....	1-10, 6-4, 6-5
Third Party Site(s).....	1-12
Time and Material (T&M).....	7-23, 7-28
Total Environmental Restoration Contract (TERC) .....	7-33
Total Obligation Authority(ies) (TOA) .....	1-7
Treatment, Storage or Disposal (TSD) .....	1-12, 6-5

### *U*

U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) .....	2-7, 2-10, 2-11, 2-13, 2-14, 3-17, 3-35, 3-37, 4-2, 4-4, 4-38, 4-42, 4-46, 4-47, 4-52, 5-8, 5-9, 6-4, 6-5
U.S. Army Corps of Engineers (USACE) .....	1-2, 1-12, 2-4, 2-11, 3-31, 3-35, 4-8, 4-9, 4-10, 4-42, 4-52, 5-2, 5-13, 6-4, 6-5, 6-6, 7-1, 7-2, 7-5, 7-7, 7-33
U.S. Army Environmental Center .....	1-12, 5-12
U.S. Army National Guard .....	1-8
U.S. Army Reserve .....	1-8, 1-16, 2-4
U.S. Environmental Protection Agency (USEPA) .....	1-3, 1-6, 1-9, 1-10, 1-11, 1-12, 1-15, 1-17, 1-18, 2-2, 2-6, 2-7, 2-14, 3-6, 3-7, 3-9, 3-11, 3-12, 3-13, 3-16, 3-26, 3-29, 3-31, 3-32, 3-37, 3-39, 3-40, 3-41, 3-42, 3-46, 3-47, 4-1, 4-2, 4-3, 4-5, 4-6, 4-7, 4-8, 4-10, 4-11, 4-16, 4-17, 4-22, 4-24, 4-29, 4-30, 4-34, 4-36, 4-37, 4-41, 4-42, 4-45, 4-46, 4-47, 4-49, 4-52, 5-2, 5-6, 5-8, 5-9, 5-13, 5-14, 5-30, 6-5, 7-8, 7-11, 7-15
Underground Storage Tanks (UST(s)).....	1-8, 1-13, 6-5
Unexploded Ordnance(s) (UXO(s)).....	3-44, 5-28, 6-5

### *W*

Waterways Experimental Station Corps of Engineers .....	4-42
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## APPENDIX A

### Evaluation of IRP Sites Versus BRAC ERP Sites

Related Requirements and Activities	Site Description / Discussion	
	IRP	BRAC ERP
RCRA Corrective Actions (Section 1.5.3 )	<p>Eligible for ER,A funding if:</p> <ul style="list-style-type: none"> <li>Contamination resulted from past waste generation.</li> <li>Corrective action meets the definition of a response action under CERCLA.</li> </ul>	<ul style="list-style-type: none"> <li>Same as for IRP sites.</li> </ul>
Third Party Sites (Section 1.5.4)	<ul style="list-style-type: none"> <li>The Army may become a PRP to enforcement actions.</li> </ul>	<ul style="list-style-type: none"> <li>Same as for IRP sites.</li> </ul>
Research, Development, and Demonstration (Section 1.5.5)	<ul style="list-style-type: none"> <li>CERCLA Section 211 provides for selective research, development, and demonstration.</li> </ul>	<ul style="list-style-type: none"> <li>Same as for IRP sites.</li> </ul>
Building Demolition and Debris Removal (Section 1.5.6)	<ul style="list-style-type: none"> <li>Not funded with ER,A for active installations.</li> <li>Use Real Property Maintenance Account (RPMA).</li> <li>Relative minor demolition to facilitate larger environmental cleanup.</li> </ul>	<ul style="list-style-type: none"> <li>Only for safety concerns.</li> <li>Relative minor demolition to facilitate larger environmental cleanup.</li> </ul>
Underground Storage Tanks (Section 1.5.7)	<p>Eligible for ER,A funding if:</p> <ul style="list-style-type: none"> <li>Studies are to locate abandoned USTs.</li> <li>Activities are to determine whether a release has occurred from an abandoned site.</li> <li>Cleanup of releases from abandoned USTs.</li> </ul>	<ul style="list-style-type: none"> <li>Removal of USTs necessary to support the transfer of the property.</li> </ul>

Related Requirements and Activities	Site Description / Discussion
	IRP
	BRAC ERP
Real Property Transactions (Section 1.5.8)	<ul style="list-style-type: none"> <li>• Report of Availability – outgrants.</li> <li>• Report of Excess - disposal actions.</li> <li>• Environmental Baseline Survey for Transfer - leasing or transferring real property.</li> <li>• Transfer or lease of uncontaminated property: FOST or FOSL.</li> <li>• Transfer Environmental Condition of Property (ECOP).</li> </ul>
Closed Ranges (Section 1.5.10)	<ul style="list-style-type: none"> <li>• Range Rule applies to Closed Ranges.</li> </ul>
Public Participation (Section 4.3)	<ul style="list-style-type: none"> <li>• Technical Review Committee or Restoration Advisory Board.</li> <li>• Newsletters.</li> <li>• Public Meetings.</li> <li>• Technical Assistance for Public Participation (TAPP) Projects.</li> </ul>
Funding (Chapter 6)	<ul style="list-style-type: none"> <li>• Environmental Restoration, Army (ER,A) Account.</li> <li>• Funds must be obligated within the year of appropriation.</li> </ul>
	<ul style="list-style-type: none"> <li>• Report of Availability.</li> <li>• EBS and EA or EIS (if applicable).</li> <li>• Determine if properties can be considered uncontaminated as defined in the CERFA.</li> <li>• Transfer or lease of property: FOST or FOSL.</li> <li>• Transfer Environmental Condition of Property (ECOP).</li> <li>• ECOP for fed to fed transfer.</li> <li>• Transfer of contaminated property via Early Transfer Authority: FOSET.</li> </ul> <p><b>NOTE:</b> BRAC real property transactions can occur installation-wide.</p>
	<ul style="list-style-type: none"> <li>• Range Rule applies to Transferring Ranges which could include Active, Inactive, and Closed Ranges.</li> </ul>
	<ul style="list-style-type: none"> <li>• Technical Review Committee or Restoration Advisory Board (if there is transfer of property to the public).</li> <li>• Newsletters.</li> <li>• Public Meetings.</li> <li>• Technical Assistance for Public Participation (TAPP) Projects.</li> </ul>
	<ul style="list-style-type: none"> <li>• Base Closure Account.</li> <li>• Funding is appropriated on a multi-year basis.</li> </ul>

Related Requirements and Activities	Site Description / Discussion	
	IRP	BRAC ERP
Major Programming Plans (Chapter 6)	<ul style="list-style-type: none"> <li>• Installation Action Plan.</li> <li>• DSERTS.</li> <li>• Cost-to-Complete.</li> <li>• Relative Risk Site Evaluation.</li> </ul>	<ul style="list-style-type: none"> <li>• BRAC Cleanup Plan/BCP Abstract.</li> <li>• DSERTS.</li> <li>• Cost-to-Complete.</li> <li>• Disposal and Reuse Plan.</li> <li>• Relative Risk Site Evaluation.</li> </ul>
Teams/Members (Chapter 4)	<p>IR Cleanup Team:</p> <ul style="list-style-type: none"> <li>• Installation Commander.</li> <li>• Remedial Project Manager.</li> <li>• State Representative.</li> <li>• EPA Representative.</li> <li>• USAEC Oversight Manager</li> <li>• Executor.</li> <li>• Contracting Officer.</li> <li>• Contracting Officer's Representative (COR).</li> <li>• PAO</li> </ul>	<ul style="list-style-type: none"> <li>• Installation Commander.</li> <li>• BRAC Cleanup Team:</li> <li>• BRAC Environmental Coordinator.</li> <li>• State Representative.</li> <li>• EPA Representative.</li> <li>• Project Support Team:</li> <li>• Base Transition Coordinator.</li> <li>• USAEC Oversight Manager.</li> <li>• Executor.</li> <li>• PAO.</li> <li>• Contracting Officer.</li> <li>• COR.</li> </ul>
Remedial Action Process (CERCLA) (Section 3.3 - 3.7)	<ul style="list-style-type: none"> <li>• Identification Phase – PA/SI.</li> <li>• Hazard Ranking System Scoring.</li> <li>• Investigation Phase - RI/FS.</li> <li>• Cleanup Phase - RD/RA.</li> <li>• Long-term monitoring and long-term operations</li> <li>• Site Close-out</li> </ul>	<ul style="list-style-type: none"> <li>• Same as for IRP NPL sites.</li> </ul> <p><b>NOTE:</b> EIS and EBS will typically begin early in the BRAC process.</p>

Related Requirements and Activities	Site Description / Discussion		
	IRP	BRAC ERP	
Cleanup Schedule (Section 4.1)	<ul style="list-style-type: none"> <li>• CERCLA Section 120.</li> <li>• RCRA Corrective Action, if applicable.</li> </ul>	<ul style="list-style-type: none"> <li>• CERCLA Section 120.</li> <li>• RCRA Corrective Action, if applicable.</li> </ul>	
Superfund Administrative Reforms (Deleting Clean Parcels From NPL) (Section 3.6.9)	<ul style="list-style-type: none"> <li>• Partial deletion at NPL sites.</li> </ul>	<ul style="list-style-type: none"> <li>• Partial deletion at NPL sites (accelerated).</li> </ul>	
Prioritize Sites (Chapter 6)	<ul style="list-style-type: none"> <li>• Imminent health or environment threat.</li> <li>• Relative Risk Site Evaluation.</li> <li>• Existing Regulatory Agreements.</li> </ul>	<ul style="list-style-type: none"> <li>• Imminent health or environment threat.</li> <li>• Reuse drivers.</li> <li>• Existing Regulatory Agreements.</li> <li>• Relative Risk Site Evaluation.</li> </ul>	
Activities Not Eligible for Funding (Section 1.2.2)	<ul style="list-style-type: none"> <li>• Asbestos surveys.</li> <li>• Lead-based paint surveys.</li> <li>• Testing, repair, or replacement of active USTs.</li> <li>• Radon testing.</li> <li>• Overseas environmental restoration activities.</li> <li>• Testing, storing, disposing or replacing PCB transformers.</li> </ul>	<ul style="list-style-type: none"> <li>• Costs for ensuring environmental compliance of current operations.</li> <li>• Funding for asbestos and lead-based paints abatement unless an immediate health hazard exists.</li> </ul>	




UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

MAR 15 1989

OFFICE OF  
WASTE AND EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: Transmittal of Workgroup's Suggested Modifications to  
DOD - EPA Model IAG Language

FROM: Bruce M. Diamond, Director   
Office of Waste Programs Enforcement

TO: Waste Management Division Directors  
Regional Counsels  
Regions I - X

As you know, EPA reached agreement with the Department of Energy (DOE) (see Memorandum dated May 27, 1988), and the Department of Defense (DOD) (see Memorandum dated June 17, 1988), regarding model language to be utilized in CERCLA cleanup agreements known as IAGs. The model language was developed without direct state participation. This was necessary to allow DOE/DOD and EPA to resolve many of the significant inter-agency and intra-executive issues associated with the cleanup of Federal facilities under CERCLA.

DOD and EPA initially determined that it would be unworkable to bring in representatives from the fifty states, or some negotiating team representing the states, in the short period it was expected to take to develop the model language. Although development of the model language took substantially longer than initially expected, states were never invited to participate in the initial development of the model language. However, DOD, DOE and EPA clearly recognized the importance of state participation in the CERCLA process. This included unanimous agreement that state issues and state concerns must be addressed at site-specific negotiations, with changes made to the model language as necessary to accommodate reasonable state issues and concerns.

To facilitate a dialogue on significant Federal facility issues, including IAG-specific issues, EPA initiated a Workgroup among representatives of EPA, the National Association of Attorneys General, the Association of State and Territorial Waste Management Officials, and the National Governors Association. The state participants in the Workgroup determined that it would be helpful to negotiate and reach agreement with DOD on specific changes to the model language to address certain state issues and concerns. The product of these negotiations, a package of mutually acceptable changes to the model language, is attached to this memorandum.

We have reviewed the attached package and have determined that if any or all of the changes set forth in the package are requested by a State in the context of site-specific negotiations, these changes are acceptable to EPA. We have agreed to accept these changes in advance in an attempt to further expedite the development of three-party IAGs. However, our acceptance of the attached package should not be construed to limit a state's options; the development of this language should not preclude, or in any way affect, the ability or right of a state to request additional or different modifications to the DOD - EPA model language to address legitimate state issues or concerns.

Please continue to work with the states to develop acceptable site-specific three-party IAGs. We hope that the attached language facilitates your settlement efforts.

Finally, I have attached copies of the memoranda from the State organizations to their member states and from DOD to the military services transmitting the suggested modifications to the model language. These memoranda are attached to provide added perspective with regard to the suggested modifications to the model language.

Attachment



THE OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE  
WASHINGTON, D.C. 20301-6000

MAR 17 1989

PRODUCTION AND  
LOGISTICS

E

MEMORANDUM FOR DEPUTY FOR ENVIRONMENT, SAFETY AND OCCUPATIONAL  
HEALTH, OASA (I&L)  
DEPUTY DIRECTOR FOR ENVIRONMENT, OASN (S&L)  
DEPUTY ASSISTANT SECRETARY OF THE AIR FORCE,  
(E,S&OH) SAF/RQ  
DIRECTOR, DEFENSE LOGISTICS AGENCY (DLA-W)

SUBJECT: Suggested IAG Language from the State and Federal Agency  
Workgroup

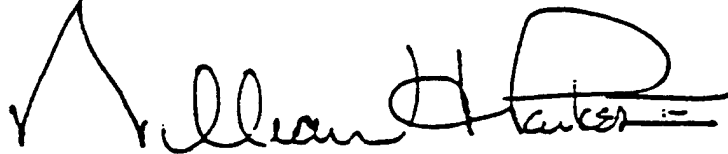
Over the last three months, DoD representatives met with State organizations to develop acceptable state language on matters covered in the original model IAG language that we agreed to with the Environmental Protection Agency for National Priority List Sites. Representatives of the National Association of Attorneys General, the Association of State and Territorial Solid Waste Management Officials, and the National Governors' Association worked with us.

On all but the force majeure and stipulated penalties provisions, we reached agreement with the state organizations on changes to the DoD-EPA model language. EPA also accepts the use of this language in agreements. A copy of this agreed upon language is attached. The DoD components should accept without reservation a state's use of all, or any subset of these provisions in the IAG negotiations. They are a reasonable accommodation of our mutual interests to provide meaningful state participation in our cleanup activities. Their direct use should facilitate the negotiations.

The above state associations are informing their members that the attached provisions are a way to soundly handle the matters that they cover and that DoD and EPA will accept them. This should promote individual state use. However, they cannot bind their member states. You may find some states asking for more favorable language to their interests on these IAG provisions. In those instances, you should feel free to discuss revisions that you would like, also. Installation negotiators



should continue to consider any additional state concerns on these provisions and evaluate their reasonableness in the context of the entire IAG negotiations. The negotiators should continue to follow existing Service guidance on stipulated penalties and force majeure.

A handwritten signature in black ink, appearing to read 'William H. Parker, III', with a stylized flourish at the end.

William H. Parker, III, P.E.  
Deputy Assistant Secretary of Defense  
(Environment)

Attachment


March 17, 1989

MEMORANDUM

TO: Governors  
State Attorneys General  
State Assistant Attorneys General  
State Superfund Program Managers

FROM: Ray Scheppach, Executive Director  
National Governors' Association 

Christine T. Milliken, Executive Director and General Counsel,  
National Association of Attorneys General 

Tom Kennedy, Executive Director,   
Association of State and Territorial Solid Waste Management Officials

RE: Suggested language for three party Federal Facility Interagency Agreements for National Priority List (NPL) sites

Enclosed for your information and reference is suggested language for a three party-state, U.S. Environmental Protection Agency (EPA), and U.S. Department of Defense (DOD) - Interagency Agreement (IAG) intended to enable DOD facilities to obtain compliance with CERCLA and applicable state laws. This agreement should facilitate negotiations among the three parties when Superfund actions are taken or anticipated at DOD installations. It was developed by staff of the National Governors' Association (NGA), the National Association of Attorneys General (NAAG), the Association of State and Territorial Solid Waste Management Officials (ASTSWMO), state officials from California, Colorado, Ohio, Maine, Minnesota, Washington, Illinois, Arizona, and DOD representatives. The three associations and state representatives undertook this effort as part of a larger effort to involve states in the implementation of The Superfund Amendments and Reauthorization Act of 1986 (SARA).

The enclosed suggested language revises the two party EPA/DOD Section 120 model IAG developed last year to incorporate a number of state concerns. The majority of language additions were made to reflect the state's participation as a party to these agreements. While many issues are addressed, not all key provisions which are subject to negotiation are included. Although the suggested language reflects the consensus of the workgroup there was not unanimous consent on the wording of each provision. Further, the language was developed in the absence of site specific issues and the history of any one facility. Therefore, we recognize that this language may not be acceptable to all fifty states or be applicable to all sites within a state.

Should a state choose, however, to use this IAG as written, both EPA and DOD will accept it without reservation. The suggested language is an attempt to write language which in whole and part can be useful to the greatest number of states at the greatest possible number of DOD facilities. It is our expectation that the enclosure will provide a basis for the initiation of negotiations and lead to expedited site-specific agreements.

Although the suggested language covers a range of subjects, there are two issues which are in the DOD/EPA model agreement that are not part of the enclosure. In addition there are other provisions

which are not reflected in either the DOD/EPA agreement or the state/EPA/DOD suggested language that are typically found in state agreements. The two issues not in the enclosure are force majeure and stipulated penalties. The state representatives felt the language provided by DOD on force majeure was too broad. With regard to stipulated penalties, the central issue is the ability of states to invoke penalties against federal facilities. Because no agreements were reached on these issues they were deleted. These issues may be resolved as necessary in individual IAG negotiations.

The enclosed suggested language does not deal with the reimbursement of state costs associated with participating in remedial actions at DOD installations. Separate discussions between the states and DOD are proceeding to establish a nationwide process for paying these costs. While the cost issues are being worked out, DOD has agreed to two options for dealing with the reimbursement of state costs. One option is to reserve the cost issue pending the completion of discussions between the states and DOD at the national level. The second option DOD may exercise is to pay state costs through individual installation agreements. At least two recent DOD/state agreements have included payment of state costs but only for a two year period with a clause to reopen the agreement upon completion of the state/DOD discussions. The state associations will update the states on the progress of discussions with DOD on the cost issue.

It is our hope that the enclosure will help facilitate and encourage successful negotiation of agreements at DOD installations. Also enclosed for your review are both DOD's and EPA's communications to their installations and regional offices regarding this effort. Should you have any questions please do not hesitate to contact Chris O'Donnell, NGA, 202/624-7871, Herb Johnson, NAAG, 202/628-6031 or Connie Saulter, ASTSWMO, 202/624-5828.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION \_\_\_\_\_,

STATE OF \_\_\_\_\_

AND THE

UNITED STATES [DOD COMPONENT]

IN THE MATTER OF:

'THE U.S. [JOD COMPONENT'S]

&lt;NAME OF FACILITY&gt;

FEDERAL FACILITY  
AGREEMENT UNDER  
CERCLA SECTION 120

Administrative  
Docket Number:

Based on the information available to the Parties on the effective date of this FEDERAL FACILITY AGREEMENT (Agreement), and without trial or adjudication of any issues of fact or law, the Parties agree as follows:

## JURISDICTION

Each Party is entering into this Agreement pursuant to the following authorities:

(i) The U.S. Environmental Protection Agency (U.S. EPA), Region <>, enters into those portions of this Agreement that relate to the remedial investigation/feasibility study (RI/FS) pursuant to Section 120(e)(1) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9620(e)(1), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), Pub. L. 99-499 (hereinafter jointly referred to as CERCLA/SARA or CERCLA) and [Sections 6001, 3008(h) and 3004(u) and (v) of] the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. [§§ 6961, 6928(h), 6924(u) and (v),] as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA) (hereinafter jointly referred to as RCRA/HSWA or RCRA) and Executive Order 12580;

(ii) U.S. EPA, Region <>, enters into those portions of this Agreement that relate to interim remedial actions and final remedial actions pursuant to Section 120(e)(2) of CERCLA/SARA, [Sections 6001, 3008(h) and 3004(u) and (v) of] RCRA and Executive Order 12580;

(iii) The [DOD Component] enters into those portions of this Agreement that relate to the RI/FS pursuant to Section 120(e)(1) of CERCLA, [Sections 6001, 3008(h) and 3004(u) and (v) of] RCRA, Executive Order 12580, the National Environmental Policy Act, 42 U.S.C. § 4321, and the Defense Environmental Restoration Program (DERP), 10 U.S.C. § 2701 et seq.;

(iv) The [DOD Component] enters into those portions of this Agreement that relate to interim remedial actions and final remedial actions pursuant to Section 120(e)(2) of CERCLA/SARA, [Sections 6001, 3004(u) and 3008(h) of] RCRA, Executive Order 12580 and the DERP.

(v) The [State] enters into this Agreement pursuant to sections 120(f) and 121(f) CERCLA/SARA, 42 U.S.C. §§ 9620(f) and 9621(f), section 3006 of RCRA, 42 U.S.C. § 6926, and [cite any applicable state law].

## PURPOSE

A. The general purposes of this Agreement are to:

(1) ensure that the environmental impacts associated with past and present activities at the Site are thoroughly investigated and appropriate remedial action taken as necessary to protect the public health, welfare and the environment;

(2) establish a procedural framework and schedule for developing, implementing and monitoring appropriate response actions at the Site in accordance with CERCLA/SARA, the NCP, Superfund guidance and policy, RCRA, RCRA guidance and policy, and applicable state law; and,

(3) facilitate cooperation, exchange of information and participation of the Parties in such actions.

B. Specifically, the purposes of this Agreement are to:

(1) Identify Interim Remedial Action (IRA) alternatives which are appropriate at the Site prior to the implementation of final remedial action(s) for the Site. IRA alternatives shall be identified and proposed to the Parties as early as possible prior to formal proposal of IRAs to U.S. EPA and [the State] pursuant to CERCLA/SARA and applicable state law. This process is designed to promote cooperation among the Parties in identifying IRA alternatives prior to selection of final IRAs.

(2) Establish requirements for the performance of a RI to determine fully the nature and extent of the threat to the public health or welfare or the environment caused by the

release and threatened release of hazardous substances, pollutants or contaminants at the Site and to establish requirements for the performance of a FS for the Site to identify, evaluate, and select alternatives for the appropriate remedial action(s) to prevent, mitigate, or abate the release or threatened release of hazardous substances, pollutants or contaminants at the Site in accordance with CERCLA/SARA and applicable state law.

(3) Identify the nature, objective and schedule of response actions to be taken at the Site. Response actions at the Site shall attain that degree of cleanup of hazardous substances, pollutants or contaminants mandated by CERCLA/SARA and applicable state law.

(4) Implement the selected interim and final remedial action(s) in accordance with CERCLA and applicable state law and meet the requirements of Section 120(e)(2) of CERCLA for an interagency agreement ~~between among~~ W+S--EPA-and-the-DOB Component the parties.

(5) Assure compliance, through this Agreement, with RCRA and other federal and state hazardous waste laws and regulations for matters covered herein.

(6) Coordinate response actions at the Site with the mission and support activities at [installation].

(7) Expedite the cleanup process [including, at site-specific negotiations, shortening the time frames specified in these model provisions] to the extent consistent with protection of human health and the environment.



(8) Provide [State] involvement in the initiation, development, selection and enforcement of remedial actions to be undertaken at [installation], including the review of all applicable data as it becomes available and the development of studies, reports, and action plans; and to identify and integrate State ARARs into the remedial action process.

(9) Provide for operation and maintenance of any remedial action selected and implemented pursuant to this Agreement.

## SCOPE OF AGREEMENT

[The purpose of this section is to identify the units which are to be addressed by the agreement and the units which will be excluded from the agreement that will be addressed by other authority, if any. At some installations it will be appropriate to cover all of the hazardous waste releases under this agreement while at others it may not be appropriate. Where all releases are covered, there are two options. First, the parties may agree to have all units, including non-NPL and RCRA units, covered by the section 120 decisionmaking process set out in this document. The second option would be to include in an agreement a separate decisionmaking process for the non-NPL and RCRA units. Since the terms of this section will vary widely from site to site, no attempt is made to provide model language.]

## STATUTORY COMPLIANCE/RCRA-CERCLA INTEGRATION

A. The Parties intend to integrate the [DOD Component]'s CERCLA response obligations and RCRA corrective action obligations which relate to the release(s) of hazardous substances, hazardous wastes, pollutants or contaminants covered by this Agreement into this comprehensive Agreement. Therefore, the Parties intend that activities covered by this agreement will ~~be-deemed-to~~ achieve compliance with CERCLA, 42 U.S.C. § 9601 et seq.; ~~to~~ satisfy the corrective action requirements of Sections 3004(u) and (v) of RCRA, 42 U.S.C. § 6924(u) and (v), for a RCRA permit, and Section 3008(h), 42 U.S.C. § 6928(h), for interim status facilities; and ~~to~~ meet or exceed all applicable or relevant and appropriate Federal and State laws and regulations, to the extent required by Section 121 of CERCLA, 42 U.S.C. § 9621 and applicable state law.

B. Based upon the foregoing, the Parties intend that any remedial action selected, implemented and completed under this Agreement ~~shall-be-deemed-by-the-Parties-to~~ will be protective of human health and the environment such that remediation of releases covered by this Agreement shall obviate the need for further corrective action under RCRA (i.e., no further corrective action shall be required). The Parties agree that with respect to releases of hazardous waste covered by this Agreement ~~concerning~~ associated with the NPL portions of the site, RCRA shall be

considered an applicable or relevant and appropriate requirement pursuant to Section 121 of CERCLA. [Releases or other hazardous waste activities not covered by this Agreement remain subject to all applicable state and federal environmental requirements.]

C. The Parties recognize that the requirement to obtain permits for response actions undertaken pursuant to this Agreement shall be as provided for in CERCLA and the NCP. The Parties further recognize that on-going hazardous waste management activities at the [installation] may require the issuance of permits under Federal and State laws. This Agreement does not affect the requirements, if any, to obtain such permits. However, if a permit is issued to the [DOD Component] for on-going hazardous waste management activities at the Site, U.S. EPA and, or [the State] shall reference and incorporate any appropriate provisions, including appropriate schedules (and the provision for extension of such schedules), of this Agreement into such permit.

~~The Parties intend that the judicial review of any permit conditions which reference this agreement~~ With respect to those portions of this Agreement incorporated by reference into permits, the parties intend that judicial review of the incorporated portions shall, to the extent review is authorized by law, only occur under the provisions of CERCLA.

D. Nothing in this Agreement shall alter the {DOD  
(Component)}'s authority with respect to removal actions conducted  
pursuant to Section 104 of CERCLA, 42 U.S.C. § 9604.

CONSULTATION WITH U.S. EPA AND THE  
STATE OF [            ]

Review and Comment Process for Draft and Final Comments

A. Applicability:

The provisions of this Part establish the procedures that shall be used by the Parties ~~{DOD-Component}-and-U.S.-EPA~~ to provide ~~the-Parties-each other~~ with appropriate notice, review, comment, and response to comments regarding RI/FS and RD/RA documents, specified herein as either primary or secondary documents. In accordance with Section 120 of CERCLA and 10 U.S.C. § 2705, the [DOD Component] will normally be responsible for issuing primary and secondary documents to U.S. EPA and [the State]. As of the effective date of this Agreement, all draft and final reports for any deliverable document identified herein shall be prepared, distributed and subject to dispute in accordance with Paragraphs B through J below.

The designation of a document as "draft" or "final" is solely for purposes of consultation with U.S. EPA and [the State] in accordance with this Part. Such designation does not affect the obligation of the Parties to issue documents, which may be referred to herein as "final", to the public for review and comment as appropriate and as required by law.

B. General Process for RI/FS and RD/RA documents:

1. Primary documents include those reports that are major, discrete portions of RI/FS or RD/RA activities. Primary

documents are initially issued by the [DOD Component] in draft subject to review and comment by U.S. EPA and [the State]. Following receipt of comments on a particular draft primary document, the [DOD Component] will respond to the comments received and issue a draft final primary document subject to dispute resolution. The draft final primary document will become the final primary document either 30 days after issuance the ~~period-established-for-review-of-a-draft-final-document~~ if dispute resolution is not invoked or as modified by decision of the dispute resolution process.

2. Secondary documents include those reports that are discrete portions of the primary documents and are typically input or feeder documents. Secondary documents are issued by the [DOD Component] in draft subject to review and comment by U.S. EPA and [the State]. Although the [DOD Component] will respond to comments received, the draft secondary documents may be finalized in the context of the corresponding draft final primary document is issued.

C. Primary Reports:

1. The [DOD Component] shall complete and transmit draft reports for the following primary documents to U.S. EPA and [the State] for review and comment in accordance with the provisions of this Part:

[Note: The list set forth below represents potential primary documents and the type of information that typically would be generated during a CERCLA cleanup at an NPL site. This list, and the list below of secondary documents, includes

discrete portions of the RI/FS or RD/RA and are subject to change in accordance with the NCP, [DOD Component] and U.S. EPA guidance, and site specific requirements. In practice, the documents will also vary with scope and nature of the project, and may either be combined or broken out into separate volumes.]

1. [Scope of Work]
2. [RI/FS Work Plan, including Sampling and Analysis Plan and QAPP]
3. [Risk Assessment]
4. [Site Characterization Report]
5. [Initial Screening of Alternatives]
6. [Treatability Studies Report and, Additional Site Characterization Report 2]
7. [Detailed Analysis of Alternatives]
8. [Proposed Plan]
9. [Record of Decision]
10. [Remedial Design]
11. [Remedial Action Work Plan]

2. Only the draft final reports for the primary documents identified above shall be subject to dispute resolution. The [DOD Component] shall complete and transmit draft primary documents in accordance with the timetable and deadlines established in Part \_\_\_\_ (Deadlines) of this Agreement.

D. Secondary Documents:

1. The [DOD Component] shall complete and transmit draft reports for the following secondary documents to U.S. EPA and [the State] for review and comment in accordance with the provisions of this Part:



1. [Initial Remedial Action/Data Quality Objectives]
2. [Post-screening Investigation Work Plan]
3. [Sampling and Data Results]

2. Although U.S. EPA and [the State] may comment on the draft reports for the secondary documents listed above, such documents shall not be subject to dispute resolution except as provided by paragraph B hereof. Target dates shall be established for the completion and transmission of draft secondary reports pursuant to Part \_\_\_\_ (Deadlines) of this Agreement.

E. Meetings of the Project Managers on Development of Reports:

The Project Managers shall meet approximately every [30] days, except as otherwise agreed by the Parties, to review and discuss the progress of work being performed at the site on the primary and secondary documents. Prior to preparing any draft report specified in Paragraphs C and D above, the Project Managers shall meet to discuss the report results in an effort to reach a common understanding, to the maximum extent practicable, with respect to the results to be presented in the draft report.

F. Identification and Determination of Potential ARARs:

1. For those primary reports or secondary documents that consist of or include ARAR determinations, the Project Managers shall meet prior to the issuance of a draft report, to identify and propose, to the best of their ability, all potential ARARs pertinent to the report being addressed. [The State] shall

identify all potential state ARARs as early in the remedial process as possible consistent with the requirements of CERCLA section 121 and the NCP. The [DOD Component] shall consider any written interpretations of ARARs provided by the state. Draft ARAR determinations shall be prepared by the [DOD Component] in accordance with Section 121(d)(2) of CERCLA, the NCP and pertinent guidance issued by U.S. EPA,--which that is not inconsistent with CERCLA and the NCP.

2. In identifying potential ARARs, the Parties recognize that actual ARARs can be identified only on a site-specific basis and that ARARs depend on the specific hazardous substances, pollutants and contaminants at a site, the particular actions proposed as a remedy and the characteristics of a site. The Parties recognize that ARAR identification is necessarily an iterative process and that potential ARARs must be re-examined throughout the RI/FS process until a ROD is issued.

G. Review and comment on Draft Reports:

1. The [DOD Component] shall complete and transmit each draft primary report to U.S. EPA and [the State] on or before the corresponding deadline established for the issuance of the report. The [DOD Component] shall complete and transmit the draft secondary document in accordance with the target dates established for the issuance of such reports established pursuant to Part \_\_\_\_ (Deadlines) of this Agreement.

2. Unless the Parties mutually agree to another time period, all draft reports shall be subject to a 30-day period for review and comment. Review of any document by the U.S. EPA and

[the State] may concern all aspects of the report (including completeness) and should include, but is not limited to, technical evaluation of any aspect of the document, and consistency with CERCLA, the NCP and any pertinent guidance or policy promulgated issued by the U.S. EPA, and with applicable state law. Comments by the U.S. EPA and [the State] shall be provided with adequate specificity so that that [DOD Component] may respond to the comment and, if appropriate, make changes to the draft report. Comments shall refer to any pertinent sources of authority or references upon which the comments are based, and, upon request of the [DOD Component], the U.S. EPA or [the State] shall provide a copy of the cited authority or reference. In cases involving complex or unusually lengthy reports, U.S. EPA or [the State] may extend the 30-day comment period for an additional 20 days by written notice to the [DOD Component] prior to the end of the 30-day period. On or before the close of the comment period, U.S. EPA and [the State] shall transmit by next day mail their written comments to the [DOD Component].

3. Representatives of the [DOD Component] shall make themselves readily available to U.S. EPA and [the State] during the comment period for purposes of informally responding to questions and comments on draft reports. Oral comments made during such discussions need not be the subject of a written response by the [DOD Component] on the close of the comment period.

4. In commenting on a draft report which contains a proposed ARAR determination, U.S. EPA or [the State] shall include a reasoned statement of whether they object to any

portion of the proposed ARAR determination. To the extent that U.S. EPA or [the State] does object, it shall explain the basis for its objection in detail and shall identify any ARARs which it believes were not properly addressed in the proposed ARAR determination.

5. Following the close of the comment period for a draft report, the [DOD Component] shall give full consideration to all written comments on the draft report submitted during the comment period. Within 30 days of the close of the comment period on a draft secondary report, the [DOD Component] shall transmit to U.S. EPA and [the State] its written response to comments received within the comment period. Within 30 days of the close of the comment period on a draft primary report, the [DOD Component] shall transmit to U.S. EPA and [the State] a draft final primary report, which shall include the [DOD Component]'s response to all written comments, received within the comment period. While the resulting draft final report shall be the responsibility of the [DOD Component], it shall be the product of consensus to the maximum extent possible.

6. The [DOD Component] may extend the 30-day period for either responding to comments on a draft report or for issuing the draft final primary report for an additional 20 days by providing notice to U.S. EPA and [the State]. In appropriate circumstances, this time period may be further extended in accordance with Part \_\_\_\_ (Extensions) hereof.

H. Availability of Dispute Resolution for Draft Final Primary Documents:

1. Dispute resolution shall be available to the Parties for draft final primary reports as set forth in Part \_\_\_\_ (Dispute Resolution).

2. When dispute resolution is invoked on a draft primary report, work may be stopped in accordance with the procedures set forth in Part \_\_\_\_ (Dispute Resolution).

I. Finalization of Reports:

The draft final primary report shall serve as the final primary report if no party invokes dispute resolution regarding the document or, if invoked, at completion of the dispute resolution process should the [DOD Component]'s position be sustained. If the [DOD Component]'s determination is not sustained in the dispute resolution process, the [DOD Component] shall prepare, within not more than 35 days, a revision of the draft final report which conforms to the results of dispute resolution. In appropriate circumstances, the time period for this revision period may be extended in accordance with Part \_\_\_\_ (Extensions) hereof.

J. Subsequent Modifications of Final Reports:

Following finalization of any primary report pursuant to Paragraph I above, any party to this Agreement ~~U.S.-EPA or the {DOD-Component}~~ may seek to modify the report, including seeking additional field work, pilot studies, computer modeling or other supporting technical work, only as provided in Paragraphs 1 and 2 below.

1. A party U.S.-EPA or the [DOD Component] may seek to modify a report after finalization if it determines, based on new information (i.e., information that became available, or conditions that became known, after the report was finalized) that the requested modification is necessary. A party U.S.-EPA or the [DOD Component] may seek such a modification by submitting a concise written request to the Project Manager of the other Parties. The request shall specify the nature of the requested modification and how the request is based on new information.

2. In the event that a consensus is not reached by the Project Managers on the need for a modification, any party U.S.-EPA or the [DOD Component] may invoke dispute resolution to determine if such modification shall be conducted. Modification of a report shall be required only upon a showing that: (1) the requested modification is based on significant new information, and (2) the requested modification could be of significant assistance in evaluating impacts on the public health or the environment, in evaluating the selection of remedial alternatives, or in protecting human health and the environment.

3. Nothing in this Subpart shall alter U.S. EPA's or [the State's] ability to request the performance of additional work, which was not contemplated by this Agreement. The [DOD Component]'s obligation to perform such work must be established by either a modification of a report or document or by amendment to this Agreement.

## RESOLUTION OF DISPUTES

Except as specifically set forth elsewhere in this Agreement, if a dispute arises under this Agreement, the procedures of this Part shall apply.

All Parties to this agreement shall make reasonable efforts to informally resolve disputes at the Project Manager or immediate supervisor level. If resolution cannot be achieved informally, the procedures of this Part shall be implemented to resolve a dispute.

A. Within thirty (30) days after: (1) ~~the period established-for-review~~ issuance of a draft final primary document pursuant to Part \_\_\_\_ (Consultation with U.S. EPA and the State), of this agreement, or (2) any action which leads to or generates a dispute, the disputing Party shall submit to the other Parties a written statement of dispute setting forth the nature of the dispute, the work affected by the dispute, the disputing Party's position with respect to the dispute and the information the disputing Party is relying upon to support its position.

B. Prior to any Party's issuance of a written statement of dispute, the disputing Party shall engage the other Parties in informal dispute resolution among the Project Managers and/or their immediate supervisors. During this informal dispute resolution period the Parties shall meet as many times as are necessary to discuss and attempt resolution of the dispute.

C. The Dispute Resolution Committee (DRC) will serve as a forum for resolution of disputes for which agreement has not been reached through informal dispute resolution. The Parties shall each designate one individual and an alternate to serve on the DRC. The individuals designated to serve on the DRC shall be employed at the policy level (Senior Executive Service [SES] or equivalent) or be delegated the authority to participate on the DRC for the purposes of dispute resolution under this Agreement. The U.S. EPA's representative on the DRC is the Waste Management Division Director of U.S. EPA's Region \_\_\_\_\_. The [State] representative on the DRC is \_\_\_\_\_. The [DOD Component]'s designated member is the [DOD Component] equivalent. Written notice of any delegation of authority from a Party's designated representative on the DRC shall be provided to all other Parties pursuant to the procedures of Part \_\_\_\_\_ (Notices).

D. Following elevation of a dispute to the DRC, the DRC shall have twenty-one (21) days to unanimously resolve the dispute and issue a written decision signed by all parties. If the DRC is unable to unanimously resolve the dispute within this twenty-one (21) day period the written statement of dispute shall be forwarded to the Senior Executive Committee (SEC) for resolution.

E. The SEC will serve as the forum for resolution of disputes for which agreement has not been reached by the DRC. The U.S. EPA representative on the SEC is the Regional



Administrator of the U.S. EPA's Region \_\_\_\_\_. The [State]  
representative on the SEC is \_\_\_\_\_. The [DOD Component]'s  
representative on the SEC is the [DOD Component] equivalent. The  
SEC members shall, as appropriate, confer, meet and exert their  
best efforts to resolve the dispute and issue a written decision  
signed by all parties. If unanimous resolution of the dispute is  
not reached within twenty-one (21) days, U.S. EPA's Regional  
Administrator shall issue written position on the dispute. The  
[DOD Component] or [the State] may, with twenty-one (21) days of  
the issuance of U.S. EPA's position, issue a written notice  
elevating the dispute to the Administrator of U.S. EPA for  
resolution in accordance with all applicable laws and procedures.  
In the event that a party ~~the-[DOD-Component]~~ elects not to  
elevate the dispute to the Administrator within the designated  
twenty-one (21) day escalation period, the party ~~{DOD-Component}~~  
shall be deemed to have agreed with Regional Administrator's  
written position with respect to the dispute.

F. Upon escalation of a dispute to the Administrator of  
U.S. EPA pursuant to Subpart E, the Administrator will review and  
resolve the dispute within twenty-one (21) days. Upon request,  
and prior to resolving the dispute, the parties U.S. EPA  
Administrator shall meet and confer with the [DOD Component's]  
Secretariat-Representative and [the commissioner of the state  
agency] to discuss the issue(s) under dispute. Upon resolution,  
the Administrator shall provide the other parties ~~{DOD-Component}~~  
with a written final decision setting forth resolution of the

dispute. The duties of the Administrator set forth in this Part shall not be delegated.

G. [The State] reserves its right to maintain an action under section 121(f)(3)(B) of CERCLA, 42 U.S.C. § 9621(f)(3)(B) to challenge the selection of a remedial action that does not attain a legally applicable or relevant and appropriate standard, requirement, criteria or limitation.

H. The pendency of any dispute under this Part shall not affect the [DOD Component]'s responsibility for timely performance of the work required by this Agreement, except that the time period for completion or work affected by such dispute shall be extended for a period of time usually not to exceed the actual time taken to resolve any good faith dispute in accordance with the procedures specified herein. All elements of the work required by this Agreement which are not affected by the dispute shall continue and be completed in accordance with the applicable schedule.

I. When dispute resolution is in progress, work affected by the dispute will immediately be discontinued if the Hazardous Waste Division Director for U.S. EPA's Region \_\_\_\_ requests, in writing, that work related to the dispute be stopped because, in U.S. EPA's opinion, such work is inadequate or defective, and such inadequacy or defect is likely to yield an adverse effect on human health or the environment, or is likely to have a substantial adverse effect on the remedy selection of

implementation process. The state may request the U.S. EPA's Region            Division Director to order work stopped for the reasons set out above. To the extent possible, the party seeking a work stoppage U.S.-EPA shall consult with the the other parties {DOD-Component} prior to initiating a work stoppage request. After stoppage of work, if a party the-{DOD-Component} believes that the work stoppage is inappropriate or may have potential significant adverse impacts, the party {DOD-Component} may meet with the party ordering a work stoppage Division-Director to discuss the work stoppage. Following this meeting, and further consideration of the issues, the U.S. EPA Division Director will issue, in writing, a final decision with respect to the work stoppage. The final written decision of the U.S. EPA Division Director may immediately be subjected to formal dispute resolution. Such dispute may be brought directly to either the DRC or the SEC, at the discretion of the party requesting dispute resolution {DOD-Component}.

J. Within twenty-one (21) days of resolution of a dispute pursuant to the procedures specified in this Part, the [DOD Component] shall incorporate the resolution and final determination into the appropriate plan, schedule or procedures and proceed to implement this Agreement according to the amended plan, schedule or procedures.

K. Resolution of a dispute pursuant to this Part of the Agreement constitutes a final resolution of any dispute arising under this Agreement. All Parties shall abide by all terms and

conditions of any final resolution of dispute obtained pursuant to this Part of this Agreement.

## ENFORCEABILITY

A. The Parties agree that:

(1) Upon the effective date of this Agreement, any standard, regulation, condition, requirement or order which has become effective under CERCLA and is incorporated into this agreement is enforceable by any person pursuant to Section 310 of CERCLA, and any violation of such standard, regulation, condition, requirement or order will be subject to civil penalties under Sections 310(c) and 109 of CERCLA; and

(2) all timetables or deadlines associated with the RI/FS shall be enforceable by any person pursuant to Section 310 of CERCLA, and any violation of such timetables or deadlines will be subject to civil penalties under Sections 310(c) and 109 of CERCLA;

(3) all terms and conditions of this Agreement which relate to interim or final remedial actions, including corresponding timetables, deadlines or schedules, and all work associated with the interim or final remedial actions, shall be enforceable by any person pursuant to Section 310(c) of CERCLA, and any violation of such terms or conditions will be subject to civil penalties under Sections 310(c) and 109 of CERCLA; and

(4) any final resolution of a dispute pursuant to Part \_\_\_\_ of this Agreement which establishes a term, condition, timetable, deadline or schedule shall be enforceable by any person pursuant to Section 310(c) of CERCLA, and any

violation of such term, condition, timetable, deadline or schedule will be subject to civil penalties under Sections 310(c) and 109 of CERCLA.

B. Nothing in this Agreement shall be construed as authorizing any person to seek judicial review of any action or work where review is barred by any provision of CERCLA, including Section 113(h) of CERCLA.

C. Nothing in this agreement shall be construed as a restriction or waiver of any rights the U.S. EPA or [the State] may have under CERCLA, including but not limited to any rights under sections 113 and 310, 42 U.S.C. §§ 9613 and 9659. The DOD does not waive any rights it may have under CERCLA section 120, SARA section 211 and Executive Order 12580.

D. The parties agree to exhaust their rights under Part [Dispute Resolution] prior to exercising any rights to judicial review that they may have.

E.G. The Parties agree that all Parties shall have right to enforce the terms of this Agreement.

## DEADLINES

[This model provision assumes no investigatory work is in progress at the site and no schedules have been previously established for study work. The degree of specificity and completeness of the deadlines contained herein shall be based upon information possessed at the time of development of the site-specific agreement.]

A. The following deadlines have been established, by U.S. EPA and the State, for the submittal of draft primary documents pursuant to this Agreement:

1. [Scope of Work]

B. Within twenty-one (21) days of the effective date of this Agreement, the [DOD Component] shall propose deadlines for completion of the following draft primary documents:

2. [RI/FS Work Plan, including Sampling and Analysis Plan and QAPP]
3. [Risk Assessment]
4. [Site Characterization Report]
5. [Initial Screening of Alternatives]
6. [Treatability Studies Report and, or Additional Site Characterization Report]
7. [Detailed Analysis of Alternatives]
8. [Proposed Plan]
9. [Record of Decision]

Within fifteen (15) days of receipt, U.S. EPA and the State shall review and provide comments to the [DOD Component] regarding the proposed deadlines. Within fifteen (15) days following receipt of the comments the [DOD Component] shall, as appropriate, make revisions and reissue the proposal. The parties shall meet as necessary to discuss and finalize the proposed deadlines. If the Parties agree on proposed deadlines,

the finalized deadlines shall be incorporated into the appropriate Work Plans. If the Parties fail to agree within thirty (30) days on the proposed deadlines, the matter shall immediately be submitted for dispute resolution pursuant to Part \_\_\_\_ (Dispute Resolution).

The final deadlines established pursuant to this Paragraph shall be published by U.S. EPA and the State.

C. Within twenty-one (21) days of issuance of the Record of Decision, the [DOD Component] shall propose deadlines for completion of the following draft primary documents:

9. [Remedial Design]

10. [Remedial Action Work Plan]

These deadlines shall be proposed, finalized and published utilizing the same procedures set forth in Paragraph B. above.

D. The deadlines set forth in this Part, or to be established as set forth in this Part, may be extended pursuant to Part \_\_\_\_ (Extensions) of this Agreement. The Parties recognize that one possible basis for extension of the deadlines for completion of the Remedial Investigation and Feasibility Study Reports is the identification of significant new Site conditions during the performance of the remedial investigation.



## EXTENSIONS

A. Either a timetable and deadline or a schedule shall be extended upon receipt of a timely request for extension and when good cause exists for the requested extension. Any request for extension by the [DOD Component] shall be submitted in writing and shall specify:

1. The timetable and deadline or the schedule that is sought to be extended;
2. The length of the extension sought;
3. The good cause(s) for the extension; and
4. Any related timetable and deadline or schedule that would be affected if the extension were granted.

B. Good cause exists for an extension when sought in regard to:

1. An event of force majeure;
2. A delay caused by another party's failure to meet any requirement of this agreement;
3. A delay caused by the good faith invocation of dispute resolution or the initiation of judicial action;
4. A delay caused, or which is likely to be caused, by the grant of an extension in regard to another timetable and deadline or schedule; and
5. Any other event or series of events mutually agreed to by the Parties as constituting good cause.

C. Absent agreement of the Parties with respect to the existence of good cause, the [DOD Component] may seek and obtain a determination through the dispute resolution process that good cause exists.

D. Within seven days of receipt of a request for an extension of a timetable and deadline or a schedule, U.S. EPA and [the State] shall advise the [DOD Component] in writing of their respective positions on the request. Any failure by U.S. EPA or [the State] to respond within the 7-day period shall be deemed to constitute concurrence in the request for extension. If U.S. EPA or [the State] does not concur in the requested extension, it shall include in its statement of nonconcurrence an explanation of the basis for its position.

E. If there is consensus among the Parties that the requested extension is warranted, the [DOD Component] shall extend the affected timetable and deadline or schedule accordingly. If there is no consensus among the Parties as to whether all or part of the requested extension is warranted, the timetable and deadline or schedule shall not be extended except in accordance with a determination resulting from the dispute resolution process.

F. Within seven days of receipt of a statement of nonconcurrence with the requested extension, the [DOD Component] may invoke dispute resolution.

G. A timely and good faith request for an extension shall toll any assessment of stipulated penalties or application for judicial enforcement of the affected timetable and deadline or schedule until a decision is reached on whether the requested extension shall be approved. If dispute resolution is invoked

and the requested extension is denied, stipulated penalties may be assessed and may accrue from the date of the original timetable, deadline or schedule. Following the grant of an extension, an assessment of stipulated penalties or an application for judicial enforcement may be sought only to compel compliance with the timetable and deadline or schedule as most recently extended.

## FUNDING

It is the expectation of the Parties to this Agreement that all obligations of the [DOD Component] arising under this Agreement will be fully funded. The [DOD Component] agrees to seek sufficient funding through the DOD budgetary process to fulfill its obligations under this Agreement.

In accordance with Section 120(e)(5)(B) of CERCLA, 42 U.S.C. § 9620(e)(5)(B), the [DOD Component] shall include in its annual report to Congress the specific cost estimates and budgetary proposals associated with the implementation of this Agreement.

Any requirement for the payment or obligation of funds, including stipulated penalties, by the [DOD Component] established by the terms of this agreement shall be subject to the availability of appropriated funds, and no provision herein shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. § 1341. In cases where payment or obligation of funds would constitute a violation of the Anti-Deficiency Act, the dates established requiring the payment or obligation of such funds shall be appropriately adjusted.

If appropriated funds are not available to fulfill the [DOD Component]'s obligations under this Agreement, U.S. EPA and [the State] reserve the right to initiate an action against any other person, or to take any response action, which would be appropriate absent this Agreement.

Funds authorized and appropriated annually by Congress under the "Environmental Restoration, Defense" appropriation in the

Department of Defense Appropriation Act and allocated by the DASD(E) to the [DOD Component] will be the source of funds for activities required by this Agreement consistent with section 211 of SARA, 10 U.S.C. Chapter 160. However, should the Environmental Restoration, Defense appropriation be inadequate in any year to meet the total [DOD Component] CERCLA implementation requirements, the DOD shall employ and the [DOD Component] shall follow a standardized DOD prioritization process which allocates that year's appropriations in a manner which maximizes the protection of human health and the environment. A standardized DOD prioritization model shall be developed and utilized with the assistance of U.S. EPA and the states.

## APPENDIX C

### RANGE RESPONSE PROCESS

The Federal Facility Compliance Act of 1992 amended RCRA and required the USEPA to promulgate regulations identifying when military munitions become hazardous waste subject to RCRA regulations. The USEPA, in coordination with DoD, developed the Military Munitions Rule to identify when conventional and chemical munitions become a hazardous waste under RCRA, primarily with respect to storage and transportation. The final USEPA Military Munitions Rule was published on February 12, 1997.

#### 1. Proposed DoD Range Rule

In the course of events leading to the final USEPA Military Munitions Rule, DoD began development of the "DoD Range Rule". The DoD Range Rule which was proposed on September 26, 1997 addresses Military Munitions on Closed, Transferring, and Transferred Ranges. The DoD Range Rule does not apply to Active or Inactive Ranges. The types of ranges are described below:

- Active Range - is a range that is currently in service and is being regularly used for range activities.
- Inactive Range - is a range that is not currently being used, but is still under military control and is considered to be a potential range area, and has not been put to a new use incompatible with range activities. Inactive Ranges are not be considered "closed" under the DoD Range Rule.
- Closed Ranges - includes those ranges that are within military control but are put to a use incompatible with range activities.
- Transferring Ranges - includes those ranges associated with BRAC activities and other property transfers to nonmilitary entities.
- Transferred Ranges - includes those being identified in the FUDS program.

The Proposed DoD Range Rule identifies a process for evaluating response actions on Closed, Transferred, and Transferring ranges. These response actions fully encompass safety, are protective of human health and the environment, and address risks based upon reasonably anticipated future land use. The DoD Range Rule only applies to ranges located in the U.S. and its territories.

#### 2. Overview of the Range Response Process

The acute hazards associated with military munitions, especially unexploded ordnance (UXO), are the primary factor driving the scope, sequence, and types of environmental restoration

actions that are possible on the range. These concerns are unique to Military Ranges in that most actions on CERCLA response or RCRA corrective action sites do not need to consider an explosion hazard posed by the presence of a munition or explosive.

The process for addressing Military Ranges has five basic phases. These are:

- Range Identification - All Closed, Transferred, and Transferring Ranges will be identified.
- Range Assessment/Accelerated Response - A site-specific Range Assessment will be implemented to assess the explosives safety, human health, or environmental risks the range might pose. When range conditions warrant an Accelerated Response, the Army would implement a readily available, proven method of addressing the immediate risk.
- Range Evaluation/Site-Specific Response - If the protective measures are not sufficient at a specific range, the Range Evaluation process will be initiated. The Range Evaluation process includes more detailed data collection to support a site-specific safety risk assessment and a site-specific human health and ecological risk assessment. At the completion of the Range Assessment and/or Range Evaluation phase, DoD will document the response decision.
- Recurring Review - Recurring Reviews will be conducted if ordnance or UXO remain, or possibly remain, on the range.
- Ending the Range Response Action - The final phase is an administrative close-out of range responses that have been completed.

### **3. Discussion of the Phases of the Range Response Process**

The phases of the Range Response Process are described in more detail in the Proposed DoD Range Rule. As the DoD Range Rule becomes final, some aspects described below may change.

#### **3.1. Identification of Closed, Transferred, and Transferring Military Ranges**

The first phase of the range response process is the identification of Closed, Transferred, and Transferring Ranges. In this phase, a list of the ranges subject to these requirements will be developed. The installation will identify all land and water areas potentially subject to the DoD Range Rule. This information will form a permanent record and centralized tracking system for Closed, Transferred, and Transferring Military Ranges.

The DoD Range Rule makes use of current DoD record keeping practices. For example, permanent records are required for each range area, Active, Inactive, or Closed. These records should indicate known and suspected range areas, and identify military munitions used, their hazard, quantity, locations, and UXO rates. Transfer records are required to detail past ammunition and explosive use, provide information on Other Constituents, and advise the user not to excavate or drill in range areas without a metal detection survey. This information is required to be entered in the permanent land records of the civil jurisdiction in which the

property is located. To the extent to which any of these records are available for the closed, transferred, or transferring ranges, they will be used in the range identifications process.

Following identification, all ranges should enter the Range Assessment/Accelerated Response phase of the range response process.

### **3.2. Range Assessment/Accelerated Responses**

One goal of the Range Assessment/Accelerated Response is to determine the condition of the property. Another goal of the Range Assessment/Accelerated Responses phase is to identify methods to accelerate the response process by delineating areas within the range where response activities are necessary and by limiting the effort spent collecting data to only the level necessary to address the uncertainties that accompany prompt action. The Range Assessment/Accelerated Responses phase should use readily available information through a combination of file searches and "desktop" information collection and analysis to determine if additional investigation or implementation of an Accelerated Response is warranted, based on range conditions.

For clarity, the following discussion presents the Range Assessment and Accelerated Response separately. However, the Range Assessment and Accelerated Response should be concurrent, interrelated activities.

The Range Assessment is a limited-scope investigation designed to distinguish between ranges, and areas within ranges, posing little or no safety, human health, or environmental risks and ranges, or areas within ranges, that do pose such risks. Ranges that pose a risk warrant further investigation or implementation of an Accelerated Response. The initial effort in an Range Assessment will be a compilation and analysis of existing information about the range and its surroundings, similar to the CERCLA Preliminary Assessment or a RCRA Facility Assessment.

If in fact the area was or is a range subject to the DoD Range Rule, the next phase of the Range Assessment is collection of information on the types and quantities of munitions employed at the range. This information feeds into the assessment of the risks posed by the munitions and UXO potentially found on the range.

To address the risks posed by Other Constituents, which may include CERCLA hazardous substances, known or suspected to be present on the range, DoD will use existing information on the constituents identified during the assessment of the munitions employed on the range and any other potential sources of waste on the range. The Range Assessment also will require collection of existing data on the environmental setting of the range, the location and identity of receptors potentially impacted by the range, and specific routes of exposure of concern. The preliminary phases of the Range Assessment, which depend primarily on existing information, can suggest that a visual inspection of the range or limited-scale sampling of environmental media is necessary to develop a more complete understanding of the conditions at the range or to better delineate areas requiring response activities. In either case, entry onto the range requires a development of an Explosives Safety Plan and submittal of the plan to the DoD Explosives Safety Board for coordination. If the information suggests a need for sampling of environmental media, the installation conducting the response should develop a work plan describing the



objectives and plan for conducting the sampling, including the Standard Operating Procedures to be used for the range response. Typically, the plan for sampling and analysis of environmental media will use a format similar to the one used when conducting these activities under a CERCLA response or RCRA corrective action.

Accelerated Responses are any readily available, proven method of addressing the identified risks posed by munitions or Other Constituents at ranges subject to these requirements. In many cases the Accelerated Responses are Institutional Controls. See Section 3.14 for a more detailed discussion of Institutional Controls.

The Range Assessment/Accelerated Response Report will document the findings of all assessment activities and the reasons for and effectiveness of each Accelerated Response at the range. Once the draft Range Assessment/Accelerated Response Report is complete, DoD will include it in the Administrative Record and make it publicly accessible at the Information Repository.

### **3.3. Range Evaluation/Site-Specific Response Evaluation**

Range Evaluations are detailed investigations of the munitions employed on the range, the Other Constituents believed or known to be present, and the environmental setting. Generally, a Range Evaluation, which will be performed when making an informed risk management decision, requires the collection and analysis of a significant quantity of quantitative information not otherwise available. This information collection often is a complex, long-term effort (e.g., groundwater monitoring) that demands careful planning before its execution. This phase includes evaluation of site safety, and potential human health and ecological impacts.

The types of information collected during the Range Evaluation are similar to that collected during the Range Assessment/Accelerated Response phase and serve the same purposes; however, the information collected is far more specific and typically quantitative in nature. For example, where the Range Assessment/Accelerated Response used estimates of various values such as the quantity of munitions employed on the range and the density (i.e., distribution) of UXO, the Range Evaluation uses a combination of detailed "desktop" evaluations and field sampling to refine the estimates.

To assess the risk posed by the Other Constituents known or suspected to be present on the range, the installation will use existing information on the Other Constituents identified during the Range Assessment. This review will provide the basis for developing a "target" list of potential constituents. This approach also will focus the collected information on the health and environmental characteristics of the constituents that may be present on the range. Similarly, it is possible to focus collection of information on the environmental setting.

The collection and analysis of additional information about conditions at the range lead to the primary purpose of the Range Evaluation, a detailed, quantitative assessment of the risks posed by the munitions and Other Constituents at the range. This information is necessary to make informed risk management decisions. Once the objectives set for the Range Evaluation are reached, the findings and conclusions will be presented in a formal Range Evaluation Report.

An Site-Specific Response Evaluation examines various response alternatives that address risks posed by the range which have not been or cannot be effectively addressed by Accelerated Responses. The Site-Specific Response Evaluation process is similar to the Feasibility Study under CERCLA; however, there is one very important distinction: explosives safety is a frequent overriding concern. If a given response alternative cannot minimize explosives safety risks, then it will be dropped from consideration.

The explosive risks posed by munitions to response personnel will warrant screening out response alternatives that might otherwise be considered at typical CERCLA sites. If a given response alternative cannot provide adequate explosives safety, this will result in its elimination from consideration.

This focusing effort will lead to the development of the Site-Specific Response Evaluation Plan. The Site-Specific Response Evaluation Plan will be a single, concise document that provides all necessary information about the objectives established for the Site-Specific Response Evaluation, the rationale for those objectives, and how those objectives will be achieved. As necessary, the document will detail sampling and analysis protocols, safety requirements, data analysis procedures, or treatability studies required to complete the Site-Specific Response Evaluation. The Site-Specific Response Evaluation Plan will be part of the Administrative Record.

If the identified risks posed by the range require an Site-Specific Response Evaluation, preparation of the Range Evaluation Report may be deferred until the Site-Specific Response Evaluation is complete. In that case, a single, comprehensive document called the Range Evaluation/Site-Specific Response Evaluation Report will be prepared after the Site-Specific Response Evaluation is completed to document the findings of both the Range Evaluation and the Site-Specific Response Evaluation.

A formal decision document will identify the alternative(s) to be implemented and discuss the goals of the response (e.g., the risk to be addressed) and how the response will achieve those goals. This discussion needs to provide information as to how the alternative(s) provides for explosives safety, protects human health and the environment, addresses the concerns that the public and government agencies expressed in written comments, and eliminates, reduces, or controls the identified risks posed by munitions or Other Constituents present at the range

### **3.4. Recurring Reviews**

DoD will require recurring reviews of Accelerated Responses, conditions imposed as part of a Technical Impracticability determination, and site-specific response. Technical Impracticability is a term that refers to the fact that explosives safety concerns and limitations to existing UXO detection and destruction technologies may lead to consideration of site-specific remedies that do not include response actions. Sites issued a Determination of No Further Action will not be subject to recurring reviews, but if a previously unidentified risk is identified at a later date, DoD is obligated to take necessary response actions.

The purpose of recurring reviews is to determine if the responses taken continue to ensure explosives safety, protect human health and the environment, prevent off-range releases of Other Constituents, and provide an opportunity for assessing the applicability of new UXO technology or other new technology that will overcome a previous Technical Impracticability determination.

The first recurring review at Closed, Transferred, and Transferring Ranges will occur after 3 years. Subsequent recurring reviews would occur at year 7 and at 5-year intervals thereafter, or as necessary to ensure that the response is still effectively addressing the identified risks posed at the range.

At each recurring review, the installation will formally document the review procedures and the evaluation criteria used to assess the effectiveness of the response. The document also will describe any information collected or analysis conducted as part of the review. Finally, the document will provide a discussion of the findings, stating whether or not the response continues to address the hazards at the range and if any new problem is discovered in the period since the last review. If the response failed to remain effective, or if a new problem is discovered, the installation responsible for that range will provide a discussion of what actions will be taken to return the response to full effectiveness. If a new problem is identified, the installation will document the actions to be taken to address that problem and the schedule for the actions.

### **3.5. Ending the Range Response Process**

Following completion of an appropriate number of recurring reviews to demonstrate that the range is unlikely to pose an explosives safety risk or a risk to human health or the environment, the installation would administratively close out and end the range response. The installation will prepare a Range Close-Out Report justifying completion of the response. This report will include:

- A summary of the range's history and past and current conditions.
- Demonstration that all response objectives have been met.
- A determination that sufficient monitoring results have been collected to demonstrate that the response objectives have been achieved.
- Demonstration that any long-term maintenance requirements for the response are capable of being successfully carried out.
- Documentation that the range response has effectively addressed the hazards posed by Military Munitions and Other Constituents at the range.

The responsible installation will provide a copy of the draft Range Close-Out Report to the appropriate state and Federal agencies, American Indian Tribe, and Federal Land Manager for their review and comment. The installation also will publish a notice of availability and brief summary of the Range Close-Out Report in a major local newspaper of general circulation, and announce a 45-day period for submission of written comments to the installation point of contact for that range. The installation will prepare a DD describing the actions to be taken, and will provide that document to the appropriate regulators, American Indian Tribe, and Federal Land Manager for concurrence. The final Range Close-Out Report, decision document, and supporting information will be placed in the Administrative Record for the range response.

## APPENDIX D

### EXTRACTS FROM AR 200-1

#### **Chapter 5: Hazardous and Solid Waste Management**

##### **5-1. Scope**

This chapter defines Army policy for managing hazardous and solid wastes. Related policy guidance on solid waste may be found in AR 420-49. The goals of the Army's hazardous and solid waste management programs are to protect the public health and the environment by minimizing the generation of hazardous and solid wastes, developing cost-effective waste management practices, saving energy, and conserving natural resources. Regulations establishing the mechanism for identifying solid wastes that are hazardous are found in 40 CFR Part 261 and applicable state, local, and host nation regulations.

##### **5-3. Major Program Requirements**

*a.* Resource Conservation and Recovery Act (RCRA) compliance.

- (1) The obligation to comply with hazardous waste regulations is not altered by funding considerations.
- (2) Systematically evaluate waste' streams, before treatment or disposal, to determine if they require special handling or disposal methods.
- (3) Hazardous waste management procedures for U.S. Army Reserve and National Guard Bureau facilities on an installation will be signed by the installation commander (if supported) and/or the Regional Support. Command (RSC) Commander or State Adjutant General. Blanket guidance documents will be used wherever feasible. Small Quantity Generators or Conditionally Exempt Small Quantity Generators, not located on an installation, will report their hazardous waste activities through their support installation or RSC by providing copies of manifest documents to the support installation. The support installation will consolidate information from and forward required reports from supported facilities. If non-DOD tenants require hazardous waste treatment, storage, and disposal facility permits, the contract or lease will contain specific language regarding the operation of the facility, access, damages, and environmental liability. The IC will sign permit applications as the "Owner," and the tenant will sign as the operator of the facility.
- (4) All RCRA enforcement action taken against the installation or a tenant activity will be reported IAW notification procedure outlined in paragraph 15-7.
- (5) Tenants and supported facilities of military installations receiving notices from state or Federal environmental agencies, including ENF(s)/NOV(s), noncompliance or administrative orders or compliance requests, will forward them within 24 hours to the IC with a notification copy to their command.

*b.* Inventory. Each installation or Army facility generating hazardous waste will maintain an inventory of hazardous waste that is generated, treated, stored, disposed of, or transported off-site by the installation and supported facilities.

*c.* Transportation.

(1) For military installations, the IC will establish procedures for transporting hazardous waste and maintaining the required records in accordance with Federal, state and local guidelines.

(2) The IC may delegate signatory authority for hazardous waste manifest signature and responsibility for manifest record keeping and documentation requirements for all tenants and activities covered under the Installation Environmental Protection Agency (EPA) Generator Identification number. Only one such number is allowed per installation. The IC will ensure designated signatory authority has completed hazardous material certification training.

*d.* Hazardous waste permits.

(1) Army activities will seek to minimize the need for Army owned or operated permitted hazardous waste treatment, storage, and disposal facilities (including Subpart X). Where no alternative exists for on-site treatment, long term storage, or disposal of hazardous waste (such as improved disposal response times, joint use facilities, or contractor facilities), Army installations/CWF will obtain a RCRA permit to treat, store, and dispose of solid and hazardous waste. Requests for new permits and/or renewals of permitted facilities will be fully justified. Requests must include National Environmental Policy Act (NEPA) analysis (as required), needs analysis (see DA PAM 200-1) and appropriate MACOM approval. Appropriate command approval levels include HQDA, Director of Environmental Programs (DEP) approval for installations, civil works district approval for CWF, and Headquarters, U.S. Army Corps of Engineers approval for civil works laboratories.

(2) The IC signs the RCRA hazardous waste permit applications for the installation, sub-installations, and supported facilities as the facility "owner." The tenant will sign the permit application as the "operator." For the Defense Logistics Agency, the Defense Reutilization and Marketing Service Commander will sign as the "operator." For Army Reserve facilities, the RSC Commander will sign. This authority cannot be delegated.

*e.* Disposal of hazardous waste.

(1) The Environmental Coordinator will advise the IC on means of waste treatment, storage, or disposal in accordance with all legally applicable and appropriate Federal, state, and local regulations. Waste minimization techniques such as recycling and energy recovery will be stressed.

(2) Waste generating activities, including tenants, are responsible for characterizing waste to determine if it is hazardous. Generator knowledge may be used for the unused commercial products or when the hazardous constituents from specific processes are well documented. Laboratory analysis will be used in other cases. Evidence of the basis for waste characterization will be maintained and available for regulatory review. Assistance in characterizing waste may be obtained from the installation environmental coordinator.

(3) Defense Reutilization Marketing Office (DRMO) is the disposal agent for hazardous waste generated by the Army and will be used for hazardous waste storage and disposal with the following exceptions:

(a) Disposal agents other than DRMO may be used to ensure compliance with hazardous waste regulations on a case-by-case basis, with MACOM concurrence, where DRMO is unable to perform the disposal mission in compliance with RCRA. MACOMs will notify HQDA of the particulars and justification in each instance.

(b) Installations may use disposal agents other than DRMO on a routine basis by submitting requests through MACOM channels to HQDA (DEP) for approval. Specific requirements are outlined in DA PAM 200-1. Army tenants on installations belonging to other Federal or Military Services agencies may use hazardous waste disposal services offered by the installation without obtaining special authorization.

(c) Hazardous waste generated incidental to the execution of service or construction contracts may be disposed of by the contractor performing the basic contract.

(d) Existing non-DRMO contracts may be used until their renewal date. Facilities with existing non-DRMO contracts will request exceptions from HQDA(DAIM-ED) through command channels as outlined in DA PAM 200-1, and may continue to operate until HQDA approval.

(e) All contracts for hazardous waste disposal must be reviewed by the installation Environmental- Coordinator and the Director of Contracting, and approved by the IC.

(f) The disposal of USACE Civil Works property is not required to be accomplished through the DRMO but may be disposed when considered to be in the best interest of the government.

*f. Training.* All persons handling or managing solid and hazardous waste will be trained to perform their responsibilities in a safe and environmentally acceptable manner. Also see paragraphs 15-13 and 15-14. Specific training requirements for hazardous waste generators and facilities are located at 40 CFR Part 264.16/265.16 and 20 CFR Part 1910.120(p).

## **5-12. Technical Assistance**

Technical assistance relating to health and environmental aspects of hazardous and municipal solid waste management can be obtained from the USACHPPM. Technical assistance relating to facility management can be obtained from the USACPW.

## **Chapter 11: Environmental Restoration Programs**

### **11-1. Scope**

*a.* The goals and objectives of the Army's environmental restoration programs are to protect human health and the environment, clean up contaminated sites as quickly as resources permit, and to expedite cleanup to facilitate disposal of excess Army properties for local reuse. This chapter contains the policy for the Army's environmental restoration programs. Procedures for implementing these programs are found in the corresponding chapter of the DA PAM 200-1.

*b.* Regulations that pertain to the Army's environmental restoration program are referenced in appendix A.

*c.* This chapter applies to:

(1) The Installation Restoration Program (IRP) for real property under U.S. jurisdiction and currently controlled by the Army to include:

(a) Active, semi-active, and inactive U.S. Army and U.S. Army Reserve installations, and activities.

(b) Federally-owned or leased Army National Guard installations, activities, and properties.

(c) Contractor activities, lessees, and other tenants on Army installations or facilities.

(2) The Formerly Used Defense Sites (FUDS) program for real property formerly owned by, leased to, possessed by, or otherwise under the operational control of the Secretary of Defense or the military components that predated the Department of Defense. A site, which is neither an active nor a former DOD property, may be considered for FUDS eligibility if it is suspected of being contaminated wholly or in part by previous DOD controlled activities.

(3) The Base Realignment and Closure (BRAC) Cleanup program for realignment and closure of real property. This is mandated by base realignment and closure legislation and funded by the Base Closure Account.

*d.* The guidance in this chapter does not apply to:

(1) Contractor-owned and contractor-operated facilities that are not on real property controlled by the Army.

(2) Properties controlled by the civil works functions of the U.S. Army Corps of Engineers (USACE).

(3) Installations in foreign nations.

## **11-2. Policy**

The Army will:

*a.* Comply with Federal, state, local, and DOD requirements for the cleanup of contamination from hazardous substances.

*b.* Establish a program to accomplish early and continued public involvement in the IR, BRAC and FUDS cleanup programs.

*c.* Keep the U.S. Environmental Protection Agency (EPA) and state regulatory agencies informed of IR, BRAC and FUDS cleanup program activities.



### **11-3. Defense Environmental Restoration Program (DERP)**

*a.* The DERP provides for the cleanup of DOD hazardous waste sites, except where funded by BRAC, consistent with the provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), National Contingency Plan, and Executive Order 12580, the RCRA, sections 3004u, 3004v, and 3008h for past activities at non-permitted sites. The DERP also provides for limited activities to reduce the amount of hazardous waste generated, as well as building demolition and debris removal At FUDS. Detection and clearance of UXO on active or inactive DOD military ranges is not eligible for the DERP unless it can be verified to present an imminent threat to human safety and is specifically approved for inclusion in the program by DUSD(ES).

*b.* Funding for the Defense State Memoranda of Agreement/Cooperative Agreement (DSMOA/CA) Program and the Memorandum of Understanding (MOU) between the DOD and the Agency for Toxic Substances and Disease Registry (ATSDR) is provided through DERP defense appropriations.

*c.* Exceptions to policy contained in the DOD DERP Program Management Guidance must be requested in writing and forwarded through the chain of command to HQDA (DAIM-ED-R) for review and coordination. Approvals will be forwarded by the Director of Environmental Programs (DEP) to the OASA(IL&E).

### **11-4. Defense Environmental Restoration Program Formerly Used Defense Sites (FUDS)**

*a.* The FUDS program addresses contamination from hazardous and toxic materials (hazardous materials, hazardous materiel, hazardous substances, or hazardous waste), including abandoned ordnance and explosive waste, chemical, biological, and low-level radioactive wastes at FUDS. Also included in the FUDS program are:

(1) Correction of environmental contamination at or resulting from a FUDS creating an imminent and substantial endangerment to the public health or environment.

(2) The demolition and removal of unsafe buildings and structures at FUDS that were unsafe when released from DOD control and that have not been beneficially used since transfer by the Federal government to state and local governments or native corporations in Alaska.

*b.* The Deputy Undersecretary of Defense (Environmental Security) (DUSD(ES)) establishes the overall program policy and budget guidance. Regardless of which military service formerly controlled the property, the Army has been designated by DUSD(ES) to administer this program. The Assistant Secretary of the Army (Installations, Logistics, and Environment) (ASA(IL&E)) and Assistant Chief of Staff for Installation Management (ACSIM) are, respectively, the Army Secretariat and Army Staff proponents for the FUDS program. The FUDS program is managed and executed by the USACE. It is separate from the Army's IRP for active sites.

*c.* Environmental restoration actions necessary at DERP-FUDS which are adjacent to an active installation should be the responsibility of the Army. Prior to initiation of those environmental restoration activities, the DOD component controlling the active installation retains the "right of first refusal" to accept the restoration responsibility. If the DOD component does not exercise its right of first refusal, the Army will proceed to execute DERP-FUDS responsibilities at the site.

However, once accepted, the DOD component will execute all appropriate actions through long-term Operations and Maintenance as required.

*d.* General policy on management and execution of the FUDS program is provided in the DOD's DERP-FUDS Charter. Specific FUDS execution policy and procedures are provided in the USACE's DERP-FUDS Program Manual.

#### **11-5. Installation Restoration Program (IRP) -Active Sites**

The IRP-Active Sites addresses contamination from hazardous and toxic materials including chemical, biological, and low-level radiological wastes at active installations.

*a.* The ASA (IL&E) and the ACSIM are, respectively, the Army Secretariat and the Army Staff proponents for the IRP.

*b.* The key responsibilities for IRP implementation are delegated to:

(1) The U.S. Army Environmental Center (USAEC) for program execution, guidance, planning, oversight, and reporting.

(2) The MACOMs for response action implementation at installations within their command.

(3) Installation commanders in their role as real property and activity managers.

(4) Remedial project managers for oversight of individual sites through the IRP process.

(5) USACE for execution of projects.

*c.* Specific policy and guidance on management and execution of the IRP is provided in the current Installation Restoration Program Management Plan and the Installation Restoration Program Guidance and Procedures Manual.

#### **11-6. Base Realignment and Closure (BRAC) Program**

*a.* The BRAC program is patterned after the Army's IRP. Differences between the BRAC program and IRP are discussed in DA PAM 200-1.

*b.* The BRAC cleanup program will comply with the DUSD(ES) policy guidance for Fast Track Cleanup.

*c.* The ACSIM BRAC Office (DAIM-BO) has Army staff responsibility for execution of the fast track cleanup at closing installations.

*d.* The DEP provides environmental cleanup support to DAIM-BO. USAEC is the program manager. USACE executes assigned projects.

*e.* MACOM commanders are responsible for executing the BRAC cleanup program and initiating property disposal.

*f.* Where required by ACSIM, the MACOM will appoint a BRAC Environmental Coordinator in accordance with the current DUSD(ES) Fast Track Cleanup guidance.

g. When implemented, BRAC installations will submit the Installation Status report Part II (Environment) until closure.

### **11-7. Defense Environmental Restoration Account (DERA) Funding**

DERA is a DOD transfer account which funds DERP. DERA funds may be transferred from the central DOD account to any appropriations account. Once transferred to a particular appropriation, the funds are merged. DERA funds are then available for the same purpose and for the same time period as the account or fund to which they have been transferred. These funds must be used for the restoration projects in the approved IRP Annual Work Plan. USAEC is program manager for the annual appropriation and determines, with MACOM input, its use and distribution among the MACOMs.

a. DOD has established programming and reporting policy that is unique to DERA, including:

- (1) Programming at the installation site-specific level.
- (2) DOD priorities for eligible projects.
- (3) Programming through the headquarters of the military services.
- (4) Semi-annual reporting of data used to report Measures of Merit and Program Management Indicators.

b. The ACSIM, through the DEP, has oversight responsibility for all aspects of planning, programming, budgeting, and execution of Army DERA funds. The Deputy Assistant Secretary of the Army (Environment, Safety and Occupational Health) (DASA(ESOH)) provides information for the DOD and the President's budget submissions, based on the approved environmental restoration work plans and the IR, DSMOA and FUDS 5-year programs. Army activities and executive agencies identify DERA requirements through command channels. Additional policies regarding use of funds are contained in the current DOD DERP Program Management Guidance.

c. Draft annual work plans and five-year programs for the IR, FUDS, and DSMOAICA programs are submitted through the DEP to the ACSIM for approval. The DEP combines these work plans and prepares program and budget submissions. The DASA(ESOH) concurs with work plans prior to execution of plans.

### **11-8. BRAC Funding**

a. The BRAC cleanup program is funded from the Base Closure Account (BCA) funds. At closing installations, cleanup requirements consist of previously identified DERA requirements plus those cleanup actions required for property transfer. DERA funds transferred to meet previously identified DERA requirements plus additional funds from the Army's Total Obligation Authority (TOA) for the additional requirements constitute the BCA.

b. BCA funds are managed by DAIM-BO.

### **11-9. DERP and BRAC Cleanup Program Concept**

a. Screening for past use of hazardous substances and the potential for contamination (or reassessment, if appropriate) will be conducted at:

(1) All active Army installations and sub-installations as identified by the MACOMs and National Guard Bureau (NGB).

(2) Other properties either controlled by the Army or formerly controlled by DOD where contamination seems likely, based on the nature of known activities.

(3) All Army sites identified for closure, partial closure and realignment under the BRAC legislation.

b. IRP and BRAC projects will be conducted in accordance with the Installation Action Plan (IAP)/BRAC Cleanup Plans (BCP) approved by the IC.

c. The USAEC is the program manager for IR and BRAC cleanup programs. The IC selects the lead executing agent to provide environmental restoration services in support of these programs. Executing organizations shall coordinate the restoration/ cleanup program fully with USAEC, MACOMs, MSCs, and the installation as appropriate in accordance with the current Installation Restoration Program Management Plan for active sites and BRAC environmental guidance for base closure sites.

d. USACE is the program manager responsible for the execution of the FUDS program.

e. The Surgeon General is the approving authority for human health and ecological risk assessments.

### **11-10. Off Site Response Action**

In fulfilling its CERCLA responsibilities according to EO 12580, the Army has the authority to conduct response actions outside the installation boundary. Because of the lack of Army control over this off-site property, potential legal and technical complexity, sensitivity, and the necessity for increased public involvement, the DASA(ESOH) must be notified through the chain-of-command prior to initiating any off-site CERCLA response actions. This notification requirement does not apply to FUDS.

### **11-11. Army Facilities and FUDS Properties Included on the National Priorities List (NPL)**

a. When EPA proposes a site for the NPL, the IC must provide comments to the proposal.

b. The IC will take all necessary actions in accordance with the National Contingency Plan to ensure that an NPL site does not present a risk to human health and environment. The IC will initiate action to have the site expeditiously delisted from the NPL by EPA.

c. A Federal Facilities Agreement/Interagency Agreement should be negotiated at NPL/proposed NPL sites. The IC should ensure that the agreement focuses on only those sites which have released contaminants or have a high potential for release. The agreement should not require investigation of all sites. Clean areas should be identified as requiring no further action.

*d.* The executing agency for FUDS shall comply with the above requirements at FUDS where it accepts responsibility for directly undertaking all environmental restoration activities required at a site and the property owner assents to the Executive Agent undertaking such activities on its property.

#### **11-12. MOU Between Department of Defense and the Agency for Toxic Substances and Disease Registry**

*a.* Under CERCLA Section 104, the ATSDR is required to conduct "Health Assessments and other Health Related Activities" for sites listed or proposed on the NPL. Health assessments are based on site investigations, remedial investigations, human health risk assessment, other public health evaluation data, and studies submitted to ATSDR.

*b.* ATSDR may also perform health assessments under CERCLA for sites where individuals have been exposed to a hazardous substance for which the probable source of the exposure is a CERCLA release.

*c.* ATSDR may perform health assessments for non-NPL sites if petitioned by a licensed physician or any other individual.

*d.* DOD has entered into a MOU with ATSDR that delineates the responsibilities and procedures under which ATSDR and DOD will conduct activities mandated in CERCLA. The MOU is the single document governing the relationship between DOD and ATSDR (Refer to DOD-ATSDR MOU (DUSD(ES), 14 Jun 1993). Refer to the Installation Restoration Program Guidance and Procedure Manual for additional information about the role of ATSDR in DOD cleanup activities.

#### **11-13. Defense and State Memorandum of Agreement (DSMOA)/Cooperative Agreement (CA)**

*a.* DOD, through the DSMOA/CA program, involves State/Territorial governments in the environmental restoration of DOD installations to include IRP (Active Sites and FUDS) and the BRAC cleanup. DOD executes the DSMOA/CA Program for all military services through HQUSACE. The DUSD(ES) has given the Army the authority to negotiate DSMOAs and recommend approval of DSMOAs to the DUSD(ES).

*b.* Authority for this program is contained in 10 U.S.C. 2701(d) which allows the Secretary of Defense to enter into agreements on a reimbursable basis with states/territories to support cleanup efforts at DOD installations. Specific criteria, funding information, and services eligible for state reimbursement for this program are contained in 57, Federal Register 28835, dated 29 Jun 1992.

*c.* Installations with issues related to state environmental regulatory support should forward the issues through the MACOM to the ACSIM.

#### **11-14. Public Participation and Community Relations**

Because of the potential impact of the IR, BRAC, and FUDS programs, on the health, environment, and economic well being of the local community, the IC shall fully support public involvement in the restoration activities.

*a.* The IC shall establish a Technical Review Committee (TRC) or Restoration Advisory Board (RAB) when applicable to allow the local community an opportunity to participate in the remedy selection process. A RAB will be formed at all BRAC installations where closure involves the transfer of property to the community.

*b.* The IC shall designate an Army official as chairperson for the TRC or as co-chairperson for the RAB.

*c.* The IC is responsible for identifying interest in the cleanup program and RAB formation. This shall be accomplished through community involvement/outreach techniques to educate and solicit feedback from the community.

(1) The IC shall establish a RAB where community interest is sufficient and sustained.

(2) Indicators of sufficient interest include a request from local government or a petition from at least 50 local residents to form a RAB.

(3) Sufficient and sustained community interest is a must for any RAB regardless of the basis of its formation.

(4) If it is determined that there is not sufficient interest, outreach efforts taken shall be documented. Follow-up procedures shall also be established to monitor community interest on an ongoing basis.

*d.* At installations on the NPL, a RAB will meet the requirements of 10 USC 2705(d) for a TRC.

*e.* The executing agency for FUDS shall comply with the above requirements at FUDS where it accepts responsibility for directly undertaking all environmental restoration activities required at a site and -the property owner assents to the Executive Agent undertaking such activities on its property.

#### **11-15. Congressional Relations**

The Army will cooperate with members of Congress, state, and local elected officials in providing information pertaining to the IRP/BCP and FUDS programs.

#### **11-16. Safety and Health**

Safety and health requirements- for environmental restoration activities shall be in accordance with OSHA regulations 29 CFR 1910.120 and 29 CFR 1926.65. USACE conducted environmental restoration activities shall be performed in accordance with ER 3851-92 and EM 385-1-1.

## **Chapter 13: Automated Environmental Management Systems**

### **13-1. Scope**

*a.* This chapter describes the Army's Automated Environmental Management Information Systems (AAEMIS) for military applications. Civil Works policies, systems and reporting requirements are separately promulgated by USACE. The goal of the AAEMIS is to provide program managers with readily accessible information on environmental programs while minimizing paper reporting and short notice tasking to installations. This goal is achieved through the following automated data bases and systems:

- (1) Environmental Program Requirements (EPR) Report (formerly RCS 1383).
- (2) Army Compliance Tracking System (ACTS) Report.
- (3) Defense Environmental Network and Information Exchange (DENIX).
- (4) Installation Restoration Data Management Information System (IRDMIS).
- (5) Tank Management System (TANKMAN).
- (6) Defense Site Environmental Restoration Tracking System (DSERTS).
- (7) Environmental Compliance Assessment System (ECAS).
- (8) Installation Status Report (ISR) Part II.

### **13-6. Army Compliance Tracking System Report**

*a.* ACTS is the automated system used to collect installation environmental information for reporting to Department of Defense (DOD) and HQDA policy makers, thereby minimizing short suspense tasking to installations. ACTS was developed specifically to provide an automated tool to collect Defense Environmental Management Information System (DEMIS) report requirements. The Defense Authorization Act of 1990 mandated the collection of data on the DOD environmental program, and the DEMIS report fulfills this requirement.

*b.* The following activities will submit ACTS reports:

- (1) All active Army (CONUS) installations and installations within U.S. jurisdiction will submit reports through MSCs to MACOMs.
- (2) ARNG state commands, will submit reports to NGB for all ARNG Federally-owned facilities, Federally-supported facilities, and federal armories within that state.
- (3) RSCs will submit reports to USARC for all facilities/centers under their command.
- (4) MACOMs will submit reports to USAEC for all subcommands and installations within the United States. Reports will be submitted by DENIX file transfer. If DENIX or other electronic file transfer is not available, diskettes will be mailed to USAEC. Paper copy, submissions of enforcement actions and fines will be submitted in accordance with DA PAM 200-1.
- (5) MACOMs in foreign nations will submit reports upon implementation.

### **13-7. Defense Environmental Network and Information Exchange (DENIX)**

*a.* The DENIX is an electronic bulletin board system (BBS). The DENIX was adopted to provide DOD personnel an electronic communication system and discussion forum to exchange environmental information.

*b.* Responsibilities.

(1) The USAEC will provide representatives to participate as voting members on the DENIX Configuration Management Board. Those representatives will ensure that the Army's functional and technical needs are adequately depicted in the DENIX

(2) The USAEC will chair the Army's Functional Data Management Board whose purpose is to discuss the content and form of Army information posted to the DENIX

(3) MACOM, MSC, and installation commanders (IC) will encourage the use of DENIX as a means to electronically transfer data for review, coordination, approval, and submissions. They will also encourage the sharing of environmental information through the electronic mail and notes capabilities available through DENIX

(4) The USAEC, through the U.S. Army Construction Engineering Research Laboratory (USACERL), will propose, execute, and manage all research and development efforts to enhance the usefulness of the DENIX. They will also provide interim support for the operation and maintenance of the DENIX

### **13-8. Installation Restoration Data Management Information System (IRDMIS)**

*a.* The IRDMIS is the ultimate repository of sampling data collected in support of the Installation Restoration (IR) and Base Realignment and Closure (BRAC) activities of the USAEC. The database was specifically created to manage data from environmental chemical analysis and geotechnical efforts performed at USAEC executed projects. The IRDMIS system is maintained at USAEC, and can be accessed remotely by all users registered with USAEC. The IRDMIS system is generally limited to USAEC executed projects, and IRDMIS may not include complete data for projects for which design and remediation is done by USACE following investigations and studies by USAEC.

*b.* All organizations executing environmental sampling efforts on USAEC executed projects must submit these data to IRDMIS. These organizations include environmental consulting firms, analytical laboratories, installations, and USAEC personnel. Data from non-USAEC projects can be accepted on a case-by-case basis.

*c.* Data acceptable for IRDMIS.

(1) Environmental chemical data in the media groundwater, surface water, soil, sediment, buildings, and process equipment.

(2) Chemical quality assurance data from the analytical laboratories following USAEC validated procedures.

(3) Bore log data from the drilling of monitoring wells, test holes, etc.



- (4) Well construction data from monitoring wells and production wells.
- (5) Groundwater elevation data from monitoring wells.
- (6) Map data showing the locations of all environmental samples.

#### **13-10. Defense Site Environmental Restoration Tracking System (DSERTS)**

*a.* DSERTS is a personal computer program used by the Army for collecting environmental restoration information on sites addressed by the IR and BRAC Programs. This information is required by the DOD Restoration Management Information System (RMIS). The information collected with DSERTS is transferred to the RMIS format and submitted to DOD. The DOD uses the RMIS information to prepare the Defense Environmental Restoration Program Annual Report to Congress. The Army uses information from the DSERTS for reporting site status at the DOD in progress reviews and as the basis of sites addressed in the Installation Action Plans or Base Closure Plans.

*b.* The following activities which have past, present, or planned restoration activities will submit DSERTS information to USAEC:

- (1) MACOMs, for all CONUS active and BRAC Army installations.
- (2) ARNG, for all Federally-owned National Guard properties.
- (3) RSCs for all U.S. Army Reserve Center properties.

### **Chapter 15: Other Environmental Programs and Requirements**

#### **15-1. Scope**

This chapter provides summaries of environmental programs and requirements not addressed previously in this regulation. Use command channels to resolve any applicability issues.

#### **15-2. National Environmental Policy Act (NEPA) Requirements**

The Army will plan and conduct peacetime mission activities to minimize adverse impacts on the environment. NEPA requires Army decision makers to consider the environmental effects of their proposed programs, projects, and actions before initiating them. In some cases the Army must develop written descriptions of these considerations and provide opportunity for public review. Army requirements for compliance with NEPA and its implementing Federal regulations are addressed for military activities in AR 200-2. Civil works requirements are addressed in ER 200-2-2.

#### **15-3. Natural Resources Management**

Natural resources management includes the integrated and cooperative management of our nation's resources to provide for optimum biological diversity and multiple use, consistent with conservation stewardship and the Army mission. The Army's policy and guidance on natural resources are described in AR 200-3 (formerly AR 420-74). Civil works requirements are described in ER 1130-2-400.

#### **15-4. Cultural Resource Management**

The Army's goal is to manage the cultural resources under Army control in compliance with the Federal laws and in a spirit of stewardship of America's historic and cultural heritage. Cultural resources include those places, objects, documents, collections, and customs covered by several public laws and regulations. Compliance with these laws will be integrated with NEPA compliance and with planning and execution of any undertakings, projects, activities or programs that may affect cultural resources. The Army's policy and guidance for military activities, is provided in AR 420-40. Civil works guidance is contained in ER 1130-2-433 and ER 1105-2-100.

#### **15-5. Natural Resource Damage Assessment (NRDA)**

Under Section 107(f) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Section 311 (f)(5) of the CWA, or Section 1006 of the Oil Pollution Act, natural resource trustee officials can seek compensation from Army facilities for injury to natural resources if they have been adversely affected by release of a hazardous substance or discharge of oil. The Army, as natural resource trustee or co-trustee for Army property, can seek compensation for natural resource damages caused by non-DOD entities. The NRDA process cannot be completed before selection of the remedial alternative. The data which is collected and evaluated for ecological assessments under the environmental restoration programs can provide some information needed for a NRDA.

#### **15-6. Real Property Acquisition, Outgrant and Disposal Transactions**

*a. Applicability.* The installation commander (IC)/Army proponent for a prospective real property transaction within the United States, its territories and possessions will comply with the requirements of this section. Real property transactions covered by this section are acquisitions, sales divesting title, transfers of jurisdiction between agencies, and leases. It is not applicable to reassignments within DA, permits, licenses, and easements, except where extraordinary circumstances exist.

*b. Requirements.* It is Army policy to prepare an EBS to determine the environmental conditions of properties being considered for acquisition, outgrants, and disposals. Reassignments within DA, easements, licenses, and permits do not require an EBS. However, an EBS may be performed if desired by the Army or where extraordinary circumstances exist. The EBS is used to identify the potential environmental contamination liabilities associated with the real property transactions and to support a Finding of Suitability to Transfer (FOST), Finding of Suitability to Lease (FOSL) or an Environmental Condition of Property (ECOP). A FOST and FOSL are required for sales divesting title, and leases. An ECOP is required for transfers of jurisdictions between agencies. Only an EBS is required for acquisitions. EBSs, FOSTs, FOSLs and ECOPs shall be completed in accordance with DA PAM 200-1. Differences in requirements, staffing and regulatory involvement for FOSTs and FOSLs at base realignment and closure sites versus active sites are provided in DA PAM 200-1. The Army proponent will also follow the procedures found in AR 405-10, AR 405-80, and AR 405-90.

c. Non Army Initiated Actions. For real property transactions initiated by non-Army parties:

- (1) The non-Army party is responsible for the funding and completion of the EBS.
- (2) The IC/Army proponent will ensure completion of the EBS and should participate actively when a non-Army party conducts the EBS.
- (3) The Army may prepare the EBS, even though the non-Army party initiated the transaction, if the transaction would be in the best interest of the Army.
- (4) If a transaction stems from specific legislation, the entity with whom the property will be transferred shall conduct the EBS pursuant to this chapter.

d. Use in Other Documents. Information provided by the EBS will be integrated and documented by reference or actual text in the appropriate NEPA document prepared in accordance with AR 2002. The EBS fulfills Army obligation under 42 U.S.C. 9620(h) (CERCLA) and will also be used by real estate components in preparing a Report of Availability for a lease, or Report of Excess for disposal actions. For acquisitions, the EBS preserves the CERCLA innocent landowner defense.

e. Review and Approval. The installation, MSC, or MACOM shall initiate, review and approve EBSs. For properties in DOD Environmental Condition of Property (ECP) categories 1-3, the MACOM has the authority to approve FOSTs and FOSLs. All other FOSTs and FOSLs shall be approved by DASA(ESOH) unless specific authority for approval for these FOSTs and FOSLs is further delegated to the MACOM. All ECOPs shall be approved by the MACOM. Refer to DA PAM 200-1 for further staffing guidance and approval authority for FOSTs, FOSLs, and ECOPs.

f. Lease Termination. Upon termination of any lease, the Army proponent and grantee will jointly conduct a final EBS, funded by the grantee, to ascertain any changes in the environmental condition of the subject property. If the grantee does not participate, the IC/ Army proponent will conduct the final EBS and provide a copy to the grantee. The grantee shall be made aware of this procedure in the original outgrant document.

g. Lease Renewals. For renewal of existing leases which have previously had an EBS, or other versions of environmental documents, the IC/Army proponent must ascertain if environmental conditions have changed. If an environmentally significant change has occurred it will be documented as an amendment to the EBS. (An environmentally significant change involves the storage of a hazardous substance for a year or more, a known release of such substance, or its disposal on the property.) The revised EBS will be processed IAW paragraph 15-6e above. A copy of the revised EBS shall be provided to the grantee. Existing outgrants will not be renewed unless the EBS requirements are met.

## **15-7. Reporting Potential Liability of Army Activities and People**

a. Commanders will immediately forward criminal indictments or information against Army and civilian personnel for violations of environmental laws through command channels. Criminal actions involving Civil Works activities or personnel will be reported to the Director of Civil works. Other criminal actions will be reported to the DEP and ELD.

*b.* Any enforcement action(s) (ENF's) will be reported to USAEC through ACTS or the Compliance Deficiency Management Module if and when available within 48 hours and any fine or penalty within 24 hours IAW DA PAM 200-1.

*c.* Any actual or likely ENF not involving Civil Works that involves a fine, penalty, fee, tax, media attention, or has potential or off-post impact will be reported through technical legal channels through the MACOM ELS to ELD within 48 hours, followed by written notification within 7 days, and report of significant development thereafter.

*d.* Upon service of any summons and complaint or other process or pleadings commencing civil litigation against the United States or a soldier or employee arising out of their duties, the local staff judge advocate, counsel, or legal advisor will immediately and directly notify ELD HQDA IAW AR 27-40 or, in Civil Works matters, the Chief Counsel, USACE.

*e.* An EPA Notice of Potential Liability and/or Request for Information Letter issued under CERCLA Section 104(e) or RCRA Section 3007, Notice of Intent to Sue under any law, and any similar correspondence from state agencies or litigation potentially exposing Army activities not involving Civil Works to litigation shall be immediately reported through command channels to ELD or, matters involving Civil Works, to the Chief Counsel, USACE.

#### **15-8. Environmental Agreements**

Environmental Agreements are formal agreements between ICs or U.S. Army Corps of Engineers (USACE) commanders, and Federal, state, and local environmental regulators to evaluate, identify, or correct actual or potential environmental deficiencies. Environmental agreements include but are not limited to orders on consent, compliance agreements, consent agreements, settlements, federal facility agreements, and interagency agreements. Agreements will be forwarded through command channels to ELD for review prior to signature.

#### **15-12. Construction Site-Selection Surveys**

Environmental surveys will be conducted before construction site selection IAW AR 415-15 and AR 210-20. Every effort will be made to ensure that builders and future occupants of military facilities will not be exposed to environmental health and safety risks. These risks may result from sites contaminated by hazardous substances or unexploded ordnance.

## APPENDIX E

### MEMORANDUM OF AGREEMENT BETWEEN (EXECUTOR) AND (INSTALLATION) RELATING TO PROCEDURES FOR THE (INSTALLATION) DEFENSE ENVIRONMENTAL RESTORATION PROGRAM

I. PURPOSE: The purpose of this memorandum is to specify the roles and responsibilities for cooperation and extent of support which the (EXECUTOR) will provide (INSTALLATION) in the environmental investigation, design and clean up of selected sites at (INSTALLATION), (STATE) under the Defense Environmental Restoration Program (DERP).

This memorandum will arrange for the (EXECUTOR) to provide technical assistance, contract management, and related services required by (INSTALLATION) to execute specific Army Active Sites Installation Restoration Program (IRP) tasks. All tasks will be performed by the (EXECUTOR) in accordance with Army IRP and installation guidance, prepared in consultation with appropriate regulators and completed, to include interim deliverables, by installation negotiated deadlines.

This memorandum does not replace assigned responsibilities to current laws, regulations and Army policy and guidance under the DERP.

#### II. AUTHORITY:

A. Commander, (INSTALLATION) is responsible for environmental restoration of sites on the installation and maintains final authority for all proposed action decisions.

B. Commander, (INSTALLATION) assigns project execution to the (EXECUTOR) for activities required for environmental restoration. Examples of required activities are project planning documents, preliminary assessments, site inspections, site investigations, remedial investigations, feasibility studies, remedial designs, remedial actions, and development of long term operation and maintenance requirements.

C. The DERP provides for the clean up of Department of Defense (DOD) hazardous waste sites consistent with the provisions of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), Section 211, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 CFR 300) and Executive Order 12580, Superfund Implementation. The DERP is funded by a special Army transfer account, the Defense Environmental Restoration Account (DERA) established by 10 USC 2703.

D. The IRP is a comprehensive program to identify, investigate and clean up contamination associated with past Army activities using DERA funds. The IRP is conducted consistent with the process described in the NCP, 40 CFR 300.61-300.70, and if applicable, consistent with the substantive requirements of the Resource Conservation and Recovery Act (RCRA) corrective action process. The IRP will comply with federal, state, regional and local requirements applicable to the clean up of hazardous materials contamination.

### III. RESPONSIBILITIES:

#### A. The (EXECUTOR) will:

1. Assign a Project Manager to be the primary point of contact between (INSTALLATION) and the (EXECUTOR) for execution of (EXECUTOR's) portion of the (INSTALLATION) IRP. The (EXECUTOR) Project Manager will serve under the authority and direction of the (INSTALLATION) Remedial Project Manager (RPM) in accordance with specific tasks.
2. Provide estimates of costs and time requirements for performance of specific tasks forwarded by the (INSTALLATION) RPM. The estimates will include in-house costs, specific contract and pricing data, and costs charged for contract supervisory and administrative services.
3. Propose schedules for all deliverables and accomplish all tasks within time deadlines set forth by (INSTALLATION). Tasks will not be considered complete until reviews are prepared for all work performed and accepted by the (INSTALLATION) RPM.
4. Obtain the concurrence of the (INSTALLATION) RPM on all interpretations of statutes and regulations cited by either party to this agreement that may effect performance of a task.
5. Recognize the (INSTALLATION) RPM as the sole point of interface with all environmental regulators, report any contacts by regulators immediately to the (INSTALLATION) RPM and attend all meetings as directed by the (INSTALLATION) RPM.
6. Provide (INSTALLATION) RPM any and all available information on a task, as requested.
7. Immediately notify the (INSTALLATION) RPM of any impediment to completion of a task on or before the scheduled deadline and at or below the stated costs.
8. Provide information as requested by the deadline set forth in the request, or seek and obtain an extension.

9. Request from (INSTALLATION) specific approval before release for publication of any information gathered under this agreement. The (EXECUTOR) will not release any information concerning the (INSTALLATION) restoration program to parties outside this agreement without written approval from (INSTALLATION).

B. (INSTALLATION) will:

1. Assign a Remedial Project Manager (RPM) designated by the Commander, (INSTALLATION) to ensure all work is accomplished in accordance with regulatory, DOD and Army policy. The (INSTALLATION) RPM will be the primary point of contact between the (INSTALLATION) and the (EXECUTOR). The (INSTALLATION) RPM will assign tasks to the (EXECUTOR) describing the general scope of activities and provide project criteria, goals and general milestones for restoration work.

2. Program necessary funds through Environmental Program Requirements (EPR) reports with estimates of cost and time requirements for performance of specific tasks forwarded by the (EXECUTOR) Project Manager.

3. Approve proposed schedules and deadlines for all tasks and deliverables. Provide comments and approvals to the (EXECUTOR) on items such as scopes of work and project documents in accordance with approved schedules.

4. Provide guidance to the (EXECUTOR) concerning all interpretations of statutes and regulations cited by either party to this agreement that may effect performance of a task and document any deviations from DOD or Army policy. The (INSTALLATION) RPM is responsible for obtaining concurrence with the major Army command (MACOM) and major subordinate command (MSC) of any deviations from policy and guidance.

5. Communicate and negotiate with environmental regulators and be the sole point of interface with all regulators. The (INSTALLATION) RPM will invite the (EXECUTOR) to attend regularly scheduled meetings with regulators and other meetings as appropriate.

6. Provide all necessary available project information to the (EXECUTOR) Project Manager to ensure task completion.

7. Coordinate with the (EXECUTOR) Project Manager to resolve any impediment to completion of the task on or before the stated deadlines and at or below the stated costs. If the (EXECUTOR) fails to meet a deadline resulting in a penalty to the Army, the (INSTALLATION) RPM is responsible for notifying their MACOM and the U.S. Army Environmental Center (USAEC) (the Army's central program manager for the IRP) of the penalty and any associated costs.

8. Provide the (EXECUTOR) Project Manager with guidance on additional tasks not identified in the general scope of assigned activities. If a task is time critical, the (INSTALLATION) RPM will so state with reasons and establish a suspense date for a response.

9. Coordinate and communicate with the MACOM/MSC. The (INSTALLATION) RPM will:

(a) submit Installation Action Plans (IAPs), Defense Sites Environmental Restoration Tracking System (DSERTS) updates, EPR reports and related changes to the MACOM/MSC,

(b) coordinate meetings for MACOM/MSC attendance, and

(c) provide copies of schedules and deliverables as appropriate.

10. Develop and revise IAPs in coordination with the (EXECUTOR) Project Manager or assign the in-house development of the IAP and the annual update of the document to the (EXECUTOR) Project Manager.

11. Update the DSERTS with input from the (EXECUTOR).

12. Execute the Community Relations Program, develop a Restoration Advisory Board (RAB), chair the Technical Review Committee and establish and maintain the public repository and administrative record as appropriate.

13. Provide appropriate funds, in coordination with their MACOM/MSC, to the (EXECUTOR) for all work required to accomplish the tasks. (INSTALLATION), is responsible for implementation of DERA eligible projects, including funding the requirements and reporting through the USAEC, in accordance with Army policy and guidance.

#### IV. FUNDING

A. DERA funds are distributed to Army appropriations from an Army Transfer Account. Within the Army, all DERA eligible tasks are prioritized in accordance with RRSEs and the Army priority system. When the task is ready for award, (INSTALLATION) will request the MACOM direct funds via a Military Interdepartmental Purchase Request (MIPR) or Work Authorization Document/Funding Authorization Document (WAD/FAD) to the financial point of contact at the (EXECUTOR).

B. The requirement for the payment or obligation of funds under this agreement is subject to the availability of appropriated funds, and no provision herein shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. 1341. In cases where payment or obligation of funds would constitute a violation of the Anti-Deficiency Act, the dates established requiring the payment or obligation of such funds shall be appropriately adjusted.



## COMPARISON C

Description	RCRA Corrective Action	
Intent of Regulation	Investigating and addressing past, present, and in some cases, future environmental contamination at sites with RCRA operating permits	Investigating substances
Administration	<ul style="list-style-type: none"> <li>• Federal, State, or combined Federal/State Program</li> <li>• USEPA or authorized State has lead</li> <li>• Facility owner/operator is responsible for site investigations (Proposed 40 CFR Part 264.500)</li> <li>• USEPA or authorized State may conduct RCRA Facility Assessment (RFA)</li> </ul>	<ul style="list-style-type: none"> <li>• Federal</li> <li>• Army has</li> <li>• authorized</li> <li>• Federal</li> <li>• investig</li> <li>• USEPA</li> <li>• score, an</li> <li>• informat</li> </ul>
Types of Site and/or Facility	<ul style="list-style-type: none"> <li>• RCRA interim status facilities (RCRA Part 3008(h), 40 CFR Part 265), RCRA permitted facilities (RCRA Part 3004(u), Proposed CFR Section 264.500), and offsite (RCRA Part 3004(v))</li> <li>• Corrective action for releases to groundwater also is authorized under CFR Part 264 Subpart F</li> <li>• USEPA or authorized State may order remedial action at a site where evidence of imminent or substantial danger to human health or the environment exists (RCRA Part 7003)</li> </ul>	Any site wh pollutant, or
Definition of Site and/or Facility	All contiguous property under the control of the owner/operator of a facility seeking a permit under RCRA Subtitle C (Proposed 40 CFR Section 264.501)	Any building pond, lagoon vehicle, rolli substance ha come to be l
Constituents of Concern	<p>Corrective action authority applies to substances defined as hazardous wastes and/or hazardous constituents under RCRA (Proposed CFR Section 264.500)</p> <ul style="list-style-type: none"> <li>• Hazardous waste are defined in RCRA Part 1004(5) and 40 CFR Section 261.3 and are listed in Subpart D of Part 261</li> <li>• Criteria for identifying the characteristics of and for listing hazardous wastes are provided in Subpart B of Part 261</li> <li>• Hazardous constituents are listed in Appendix VIII of 40 CFR Part 261 and/or Appendix IX of 40 CFR Part 261</li> <li>• Mixed radioactive and hazardous chemical waste are subject to corrective action authority</li> </ul>	<p>Remedial au contaminant including sul</p> <ul style="list-style-type: none"> <li>• RCRA P</li> <li>• Federal V</li> <li>• CERCLA</li> <li>• Clean Ai</li> <li>• Toxic Su</li> </ul>

## APPENDIX F

### COMPARISON OF RCRA AND CERCLA ACTIONS

RCRA Corrective Action	CERCLA Remedial Action
addressing past, present, and in some cases, potential contamination at sites with RCRA operating	Investigating and remediating uncontrolled releases of hazardous substances from past operations
<p>or combined Federal/State Program</p> <p>Authorized State has lead</p> <p>Owner/operator is responsible for site investigations (40 CFR Part 264.500)</p> <p>Authorized State may conduct RCRA Facility Investigation (FA)</p>	<ul style="list-style-type: none"> <li>• Federal Program</li> <li>• Army has lead, with oversight/concurrence from USEPA and authorized State</li> <li>• Federal agency that owns the facility is responsible for site investigations (Executive Order 12580)</li> <li>• USEPA is responsible for developing Hazard Ranking System (HRS) score, and if necessary, National Priority List (NPL) listing, based on information provided by responsible agency</li> </ul>
<p>at status facilities (RCRA Part 3008(h), 40 CFR Part 264.500), at RCRA permitted facilities (RCRA Part 3004(u), 40 CFR Section 264.500), and offsite (RCRA Part 264.500)</p> <p>RCRA also is authorized to conduct investigations for releases to groundwater also is authorized to conduct investigations under RCRA Subpart F</p> <p>Authorized State may order remedial action at a site where there is imminent or substantial danger to human health or environment exists (RCRA Part 7003)</p>	Any site where an uncontrolled release of a hazardous substance, pollutant, or containment exists or is threatened (40 CFR Section 300.410)
Property under the control of the owner/operator of a facility requiring a permit under RCRA Subtitle C (Proposed 40 CFR Part 261.101)	Any building, structure, installation, equipment, pipe or pipeline, well, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, or aircraft, or any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located ( CERCLA Part 101 (9))
<p>Remedial authority applies to substances defined as hazardous and/or hazardous constituents under RCRA (40 CFR Part 264.500)</p> <p>RCRA defines hazardous substances in RCRA Part 1004(5) and 40 CFR Part 261.13 and are listed in Subpart D of Part 261 defining the characteristics of and for listing hazardous substances are provided in Subpart B of Part 261 hazardous constituents are listed in Appendix VIII of 40 CFR Part 261 Appendix IX of 40 CFR Part 261 and hazardous chemical waste are subject to RCRA authority</p>	<p>Remedial authority applies to all hazardous substances, pollutants, or contaminants as defined by CERCLA Part 101(14) and Part 101(33), including substances defined, designated, and listed pursuant to:</p> <ul style="list-style-type: none"> <li>• RCRA Part 3001</li> <li>• Federal Water Pollution Control Act Part 307(a) and Part 311(b)(2)(C)</li> <li>• CERCLA Part 102</li> <li>• Clean Air Act Part 112</li> <li>• Toxic Substances Control Act Part 7</li> </ul>



## APPENDIX F

### RCRA AND CERCLA ACTIONS

CERCLA Remedial Action	Additional Discussion
and remediating uncontrolled releases of hazardous in past operations	CERCLA addresses uncontrolled releases of hazardous substances, often from facilities and sites no longer in operation where contamination resulted from past practices; RCRA focuses on prevention and remediation for releases from currently operating facilities
Program and, with oversight/concurrence from USEPA and State Agency that owns the facility is responsible for site is (Executive Order 12580) responsible for developing Hazard Ranking System (HRS2) necessary, National Priority List (NPL) listing, based on provided by responsible agency	
in uncontrolled release of a hazardous substance, containment exists or is threatened (40 CFR Section 300.400)	USEPA or authorized State may respond under CERCLA to sites subject to RCRA Subtitle C (54 FR 41000, October 4, 1989)
structure, installation, equipment, pipe or pipeline, well, pit, groundwater, ditch, landfill, storage container, motor vehicle, or aircraft, or any site or area where a hazardous substance is deposited, stored, disposed of, or placed, or otherwise released ( CERCLA Part 101 (9))	Under both rules, the "site" or "facility" is defined by the areal extent of contamination, not by property boundaries, including any contamination that has migrated beyond property boundaries. Note discussion of facility and site with respect to Army installations in Section 1.6.1
Program applies to all hazardous substances, pollutants, or contaminants defined by CERCLA Part 101(14) and Part 101(33), as defined, designated, and listed pursuant to:  RCRA Pollution Control Act Part 307(a) and Part 311(b)(2)(A) Part 102 Part 112 Pollution Control Act Part 7	Contaminants of concern overlap for the two programs but standard analytical methods and QA/QC procedures differ significantly under both programs

2

# APPENDIX F: COMPARISON C

Description	RCRA Corrective Action	
Exclusions	<ul style="list-style-type: none"> <li>• Corrective action authority does not apply to substances excluded from the definition of hazardous waste under RCRA as specified in Subpart A or Part 261, including radioactive substances which are source, special nuclear, or by-product material as defined by the Atomic Energy Act (40 CFR Part 261.4(A)(4))</li> <li>• Corrective action authority under RCRA Section 3004(u) applies to polychlorinated biphenyls (PCBs) because PCBs are listed as a constituent in Appendix VIII of 40 CFR Part 261</li> </ul>	Remedial aut from the defin <ul style="list-style-type: none"> <li>• Petroleum otherwise Subparag</li> <li>• Natural ga or mixture</li> <li>• Remedial definition</li> <li>• USEPA p current lic 40658)</li> </ul>
Provisions for Removals, Interim Remedial Actions, or Short-Term Remedies	Conditional remedies or removal actions must achieve the following criteria: <ul style="list-style-type: none"> <li>• Be protective of human health and the environment</li> <li>• Achieve all media cleanup standards beyond the facility boundary as soon as practical</li> <li>• Prevent further contamination and environmental degradation by using source controls</li> <li>• Continue monitoring activities to prevent significant environmental degradation</li> <li>• Comply with waste management standards specified in proposed 40 CFR Sections 264.550-264.559</li> </ul>	<ul style="list-style-type: none"> <li>• A removal ARAR m that will a</li> <li>• There is n solutions,</li> </ul>
Triggers for Initial Site Investigation	RCRA Facility Assessment (RFA) required if: <ul style="list-style-type: none"> <li>• Facility applies for permit to treat, store, or dispose of hazardous waste (Proposed CFR Part 264.500)</li> <li>• Facility discovers release from a solid waste management unit (SWMU) at a permitted or interim status facility</li> <li>• Facility discovers a SWMU which was not examined during previous RFA at facility</li> </ul> <p>USEPA or authorized State may initiate process based on their own findings of a release or concerns about a potential release (Proposed 40 CFR Part 264.510)</p>	Preliminary A States, notific (40 CFR 300.- <ul style="list-style-type: none"> <li>• Facility is Docket (C</li> <li>• USEPA pl database o</li> </ul>

## APPENDIX F: COMPARISON OF RCRA AND CERCLA ACTIONS (Continued)

RCRA Corrective Action	CERCLA Remedial Action
<p>Remedial authority does not apply to substances in the definition of hazardous waste under RCRA Part A or Part 261, including radioactive material, special nuclear, or by-product material by the Atomic Energy Act (40 CFR Part 261).</p> <p>Remedial authority under RCRA Section 3004(u) is not required for contaminated biphenyls (PCBs) because PCBs are listed in Appendix VIII of 40 CFR Part 261.</p>	<p>Remedial authority does not apply to the following substances excluded from the definition of hazardous substance in CERCLA Part 101(14):</p> <ul style="list-style-type: none"> <li>• Petroleum, including crude oil or any fraction thereof which is not otherwise listed or designated as a hazardous substance under Subparagraphs (A) through (F) of CERCLA Part 101(14)</li> <li>• Natural gas, liquid, liquefied natural gas, synthetic gas usable for fuel, or mixtures of natural gas and synthetic gas usable for fuel</li> <li>• Remedial authority does not apply to incidence excluded from the definition of a release in CERCLA Part 101(22)</li> <li>• USEPA policy excludes radioactive releases from facilities with a current license issued by the Nuclear Regulatory Commission (40 FR 40658)</li> </ul>
<p>Removal actions must achieve the protection of human health and the environment and clean up standards beyond the facility's practical elimination and environmental degradation controls.</p> <p>Removal activities to prevent significant contamination must meet management standards specified in Sections 264.550-264.559.</p>	<ul style="list-style-type: none"> <li>• A removal or Interim Remedial Action measure that does not meet ARAR may be selected if it will become part of a total remedial action that will attain the ARAR (40 CFR Part 430(f)(1)(ii)(C)).</li> <li>• There is no presumption that a removal will provide permanent solutions, although they may</li> </ul>
<p>Preliminary Assessment (PA) required if:</p> <ul style="list-style-type: none"> <li>• A permit to treat, store, or dispose of hazardous waste (Proposed CFR Part 264.500)</li> <li>• A release from a solid waste management unit at a permitted or interim status facility</li> <li>• A SWMU which was not examined by a FA at facility</li> </ul> <p>The State may initiate process based on their own or concerns about a potential release (40 CFR 300.405).</p>	<p>Preliminary Assessment (PA) required following "discovery" by USEPA, the State, notification by facility which caused the release, or citizen petition (40 CFR 300.405)</p> <ul style="list-style-type: none"> <li>• Facility is listed on Federal Agency Hazardous Waste Compliance Docket (CERCLA Part 120(c))</li> <li>• USEPA places site in CERCLA Information System (CERCLIS) database or the State requests that the site be placed on CERCLIS</li> </ul>



## RCRA AND CERCLA ACTIONS (Continued)

CERCLA Remedial Action	Additional Discussion
<p>ity does not apply to the following substances excluded on of hazardous substance in CERCLA Part 101(14): including crude oil or any fraction thereof which is not ted or designated as a hazardous substance under hs (A) through (F) of CERCLA Part 101(14) liquid, liquefied natural gas, synthetic gas usable for fuel, f natural gas and synthetic gas usable for fuel hority does not apply to incidence excluded from the a release in CERCLA Part 101(22) y excludes radioactive releases from facilities with a e issued by the Nuclear Regulatory Commission (40 FR</p>	<p>Radionuclides generally are exempt under RCRA and petroleum/natural gas products generally are exempt under CERCLA, but at least one of these remedial authorities applies to nearly all substances present at Army sites.</p> <p>NOTE: DoD includes petroleum, oil and lubricants as contaminates subject to remediation in RCRA and CERCLA actions</p>
<p>Interim Remedial Action measure that does not meet e selected if it will become part of a total remedial action n the ARAR (40 CFR Part 430(f)(1)(ii)(C). esumption that a removal will provide permanent ough they may</p>	<ul style="list-style-type: none"> <li>• Both rules emphasize permanent remedies but allow short-term remedies under certain circumstances</li> <li>• Short-term remedies are not considered final remedies under either rule</li> </ul>
<p>smment (PA) required following "discovery" by USEPA, n by facility which caused the release, or citizen petition</p> <p>d on Federal Agency Hazardous Waste Compliance LA Part 120(c)</p> <p>site in CERCLA Information System (CERCLIS)</p> <p>State requests that the site be placed on CERCLIS</p>	<p>RCRA response generally is triggered by actions at the facility; CERCLA response generally is triggered externally (i.e., Docket listing or actions of USEPA, States, citizen)</p>

## APPENDIX F: COMPARISON

Description	RCRA Corrective Action	
Short-Term Response/Removal Actions	USEPA or authorized State may require an Interim Remedial Measure or Stabilization to abate, minimize, stabilize, mitigate, or eliminate a release or threat of release (Proposed 40 CFR Part 264.540)	USEPA or o prevent, min release (40 C
Site Investigations	RCRA Facility Assessment (RFA) <ul style="list-style-type: none"> <li>Limited investigation of existing information about a facility to identify SWMUs and determine whether actual or potential release exists (RCRA Section 264.500)</li> <li>Timetable for conducting RFA generally none specified, but schedule of compliance may be specified in the Transportation, Storage, and Disposal (TSD) permit</li> <li>Potential outcomes include:               <ul style="list-style-type: none"> <li>Modification of TSD permit or require a RFI (for permitted facilities)</li> <li>RCRA Order issued for RFI (Interim Status Facilities)</li> <li>Determination that an interim measures is or is not required</li> <li>Permit application continues through process</li> </ul> </li> </ul>	Preliminary <ul style="list-style-type: none"> <li>Limited i determin CFR Sec</li> <li>CERCLA listing on FR 31758</li> <li>Specific r Guidance</li> <li>Potential               <ul style="list-style-type: none"> <li>Deter NPL i</li> <li>Deter notific</li> <li>Deter</li> </ul> </li> </ul>
Trigger for Remedial Investigations	Determination that hazardous waste or hazardous constituents have been, or in certain limited circumstances are likely to be released from a SWMU (Proposed 40 CFR Section 264.510)	<ul style="list-style-type: none"> <li>Initial HR evaluation</li> <li>Final HR necessary</li> <li>Defense E if the site the enviro</li> </ul>
Initiating Remedial Investigations	USEPA or authorized State and Army typically enter into an agreement to conduct an RFI <ul style="list-style-type: none"> <li>For permitted facilities, specific RFI requirements are a condition of the TSD permit and will be included in the schedule of compliance (Proposed 40 CFR Section 270.34)</li> <li>For interim status facilities, specific RFI requirements will be included in the RCRA Part 3008(h) Order, which may be issued unilaterally by USEPA or the State</li> </ul>	DoD policy is into a Federal Interagency A NPL. The RI/

## APPENDIX F: COMPARISON OF RCRA AND CERCLA ACTIONS (Continued)

RCRA Corrective Action	CERCLA Remedial Action
State may require an Interim Remedial Action to abate, minimize, stabilize, mitigate, or threat of release (Proposed 40 CFR Part 264.500)	USEPA or other lead agencies may undertake Removal Action to abate, prevent, minimize, stabilize, mitigate, or eliminate a release or threat of release (40 CFR Part 300.415)
<p>Remedial Assessment (RFA)</p> <p>Review of existing information about a facility and determine whether actual or potential release (RA Section 264.500)</p> <p>Conducting RFA generally none specified, but guidance may be specified in the Storage, and Disposal (TSD) permit and include:</p> <p>If TSD permit or require a RFI (for permitted facilities)</p> <p>Issued for RFI (Interim Status Facilities) that an interim measures is or is not required</p> <p>Remedial action continues through process</p>	<p>Preliminary Assessment (PA) and Site Inspection (SI)</p> <ul style="list-style-type: none"> <li>Limited investigations of existing information about a facility to determine whether further investigation required under CERCLA (40 CFR Section 300.420)</li> <li>CERCLA Part 120(d) requires completion of PA within 18 months of listing on Federal Agency Hazardous Waste Compliance Docket (57 FR 31758, July 17, 1992); no timetable set for SI</li> <li>Specific requirements are specified in USEPA PA Guidance and SI Guidance</li> <li>Potential outcomes include: <ul style="list-style-type: none"> <li>Determination that an SI is required (after the PA) or listing on the NPL is warranted (after the SI)</li> <li>Determination that Site Evaluation is accomplished and notification of other authorities</li> <li>Determination that a removal action is or is not required</li> </ul> </li> </ul>
<p>Hazardous waste or hazardous constituents</p> <p>In limited circumstances are likely to be released (Proposed 40 CFR Section 264.510)</p>	<ul style="list-style-type: none"> <li>Initial HRS2 score less than or equal to 28.5 is required for further evaluation and possible listing on the NPL</li> <li>Final HRS2 score less than or equal to 28.5 and listing on the NPL are necessary for USEPA to require RI/FS</li> <li>Defense Environmental Restoration Program will conduct an RI even if the site scores less than 28.5 if there is any threat to human health or the environment</li> </ul>
<p>State and Army typically enter into an Interagency Agreement (IA) or RFI</p> <p>For RI/FS, specific RFI requirements are a condition of permit and will be included in the permit (Proposed 40 CFR Section 270.34)</p> <p>For RI/FS, specific RFI requirements will be included in the A Part 3008(h) Order, which may be issued by USEPA or the State</p>	<p>DoD policy is that the Army and USEPA and/or authorized State enter into a Federal Facility Agreement (FFA) or a CERCLA Part 120 Interagency Agreement (IAG) as soon as possible following listing on the NPL. The RI/FS must be initiated within 6 months of listing on the NPL.</p>



## RCRA AND CERCLA ACTIONS (Continued)

CERCLA Remedial Action	Additional Discussion
<p>lead agencies may undertake Removal Action to abate, e, stabilize, mitigate, or eliminate a release or threat of Part 300.415)</p>	
<p>ssment (PA) and Site Inspection (SI)            tigation of existing information about a facility to            etermine further investigation required under CERCLA (40            300.420)            t 120(d) requires completion of PA within 18 months of            eral Agency Hazardous Waste Compliance Docket (57            y 17, 1992); no timetable set for SI            ements are specified in USEPA PA Guidance and SI</p> <p>omes include:            tion that an SI is required (after the PA) or listing on the            ranted (after the SI)            ion that Site Evaluation is accomplished and            of other authorities            ion that a removal action is or is not required</p>	<ul style="list-style-type: none"> <li>• The PA and SI are used to gather specific data required for developing the HRS2 score; the RFA is not used to gather information for scoring, but determines whether further investigations are necessary</li> <li>• The RFA focuses primarily on characterizing SWMUs and the nature of wastes released; the PA and SI place greater emphasis on investigating the migration of contaminants beyond site boundaries and to receptors</li> <li>• Interim measures or removal actions may be required at any time in the process</li> </ul>
<p>ore less than or equal to 28.5 is required for further            possible listing on the NPL            ore less than or equal to 28.5 and listing on the NPL are            USEPA to require RI/FS            nmental Restoration Program will conduct an RI even            s less than 28.5 if there is any threat to human health or            t</p>	<ul style="list-style-type: none"> <li>• Proposed corrective action rule contains no specific provisions for facility owners to challenge decision by USEPA or authorized State to require an RFI, although dispute resolution mechanism exists (55 FR 30850)</li> <li>• NPL listing is a rulemaking process which includes a period of public comment; the final HRS2 score can be challenged legally by potentially responsible parties</li> <li>• Federal facilities where releases are addressed through RCRA are eligible for inclusion on the NPL and may be evaluated using the HRS2 (54 FR 16520, March 13, 1989)</li> </ul>
<p>he Army and USEPA and/or authorized State enter            ty Agreement (FFA) or a CERCLA Part 120            rent (IAG) as soon as possible following listing on the            ust be initiated within 6 months of listing on the NPL.</p>	<p>Non-NPL and sites not listed on the RCRA Order will be initiated based on Relative Risk Site Evaluation and Availability of Funds.</p>

## APPENDIX F: COMPARISON C

Description	RCRA Corrective Action	
Remedial Investigations	<ul style="list-style-type: none"> <li>• General purpose of the RFI is to characterize the nature, extent, direction, rate, movement, and concentration of releases, determine the potential need for corrective measures, and aid in selection and implementation of those measures</li> <li>• Specific purpose(s) described in the TSD permit (schedule of compliance) or RCRA Order and may evolve as RFI progresses</li> <li>• Technical requirements, procedures, and reports outlined in Proposed 40 CFR Sections 264.511-264.513</li> <li>• Interim Corrective Measures Study (CMS) may be required (Proposed 40 CFR Section 264.511(a)(6))</li> </ul>	<ul style="list-style-type: none"> <li>• General p characteri effective r</li> <li>• Generally baseline ri</li> <li>• Specific p facilities a</li> </ul>
Trigger for Evaluation of Remedial Alternatives	<p>CMS required when:</p> <ul style="list-style-type: none"> <li>• Concentration of one or more hazardous constituent exceeds an action level (Proposed 40 CFR Section 264.520(a))</li> <li>• USEPA or authorized State determines that the concentration of one or more hazardous constituents which are below action levels may pose a threat to human health or the environment (Proposed 40 CFR Section 264.514)</li> </ul> <p>If no CMS is required, Determination of No Further Action issued and other authorities notified (Proposed 40 CFR Section 264.514)</p> <ul style="list-style-type: none"> <li>• Class III permit modification for permitted facilities</li> <li>• Revocation of RCRA Order for interim status facilities</li> </ul>	The FS is conc
Remedial Alternatives	<ul style="list-style-type: none"> <li>• General purpose of the CMS is to evaluate corrective measures and select an alternative</li> <li>• Specific purpose(s) described in TSD permit (schedule of compliance) or RCRA Order and may evolve as CMS progresses</li> <li>• Technical requirements, procedures, and reports outlined in Proposed 40 CFR Parts 264.522-264.524</li> </ul>	<ul style="list-style-type: none"> <li>• General pu alternative</li> <li>• Specific pu facilities an</li> </ul>
Cleanup Criteria	<p>Media Cleanup Standards (MCS) are concentrations of hazardous constituents in environmental media that are protective of human health and the environment (Proposed 40 CFR Part 264.525(d)); MSC generally are not set below background</p>	<p>Preliminary Re. are protective o 300.430(3))</p>



## APPENDIX F: COMPARISON OF RCRA AND CERCLA ACTIONS (Continued)

RCRA Corrective Action	CERCLA Remedial Action
<p>of the RFI is to characterize the nature, rate, movement, and concentration of the potential need for corrective measures, and implementation of those measures as described in the TSD permit (schedule of RCRA Order and may evolve as RFI</p> <p>nents, procedures, and reports outlined in Sections 264.511-264.513</p> <p>Measures Study (CMS) may be required Section 264.511(a)(6))</p>	<ul style="list-style-type: none"> <li>• General purpose of the RI is to collect data necessary to adequately characterize the site for purposes of developing and evaluating effective remedial alternatives (40 CFR Section 300.403(d))</li> <li>• Generally involves field studies, including treatability studies, and a baseline risk assessment</li> <li>• Specific purpose(s) tailored to specific circumstances of individual facilities and may evolve as the RI/FS progresses</li> </ul>
<p>ne or more hazardous constituent exceeds proposed 40 CFR Section 264.520(a))</p> <p>red State determines that the concentration of hazardous constituents which are below action level threat to human health or the environment (Section 264.514)</p> <p>Determination of No Further Action issued (Proposed 40 CFR Section 264.514)</p> <p>ification for permitted facilities</p> <p>A Order for interim status facilities</p>	<p>The FS is concurrent with the RI (40 CFR Part 300.403(e))</p>
<p>the CMS is to evaluate corrective measures alternative</p> <p>described in TSD permit (schedule of RCRA Order and may evolve as CMS</p> <p>ents, procedures, and reports outlined in parts 264.522-264.524</p>	<ul style="list-style-type: none"> <li>• General purpose of the FS is to evaluate remedies and select an alternative</li> <li>• Specific purpose(s) tailored to specific circumstances of individual facilities and may evolve as FS progresses</li> </ul>
<p>ds (MCS) are concentrations of hazardous chemical media that are protective of human health (Proposed 40 CFR Part 264.525(d)); set below background</p>	<p>Preliminary Remedial Goals (PRGs) are acceptable exposure levels that are protective of human health and the environment (40 CFR Part 300.430(3))</p>

## RCRA AND CERCLA ACTIONS (Continued)

CERCLA Remedial Action	Additional Discussion
<p>use of the RI is to collect data necessary to adequately ne site for purposes of developing and evaluating edial alternatives (40 CFR Section 300.403(d)) olves field studies, including treatability studies, and a assessment se(s) tailored to specific circumstances of individual ay evolve as the RI/FS progresses</p>	<ul style="list-style-type: none"> <li>• The RI generally occurs only if there is evidence that the site poses some risk, whereas USEPA or authorized State may order an RFI without conclusive evidence of a release above action levels</li> <li>• The RFI is potentially more flexible than the RI, because it may, but is not required to, include all of the steps of an RI, although USEPA has begun requiring CERCLA baseline risk assessments as part of the RCRA process</li> <li>• USEPA or authorized State may require interim measures (RCRA) or expedited response/emergency action (CERCLA) without waiting for completion of the RFI or RI</li> </ul>
<p>ent with the RI (40 CFR Part 300.403(e))</p>	<ul style="list-style-type: none"> <li>• USEPA or authorized State has broad authority to require a CMS, even when current contamination does not exceed action levels</li> <li>• An RI is always associated with an FS, while an RFI is not necessarily followed by a CMS</li> </ul>
<p>se of the FS is to evaluate remedies and select an se(s) tailored to specific circumstances of individual ay evolve as FS progresses</p>	<ul style="list-style-type: none"> <li>• Both the CMS and the FS develop, screen, and lead to the formal evaluation of cleanup alternatives</li> <li>• The CMS emphasizes the effectiveness of technologies that can be combined into remedial alternatives, while the FS focuses on the protectiveness of remedies balanced against their cost-effectiveness</li> </ul>
<p>lial Goals (PRGs) are acceptable exposure levels that uman health and the environment (40 CFR Part</p>	<ul style="list-style-type: none"> <li>• Both rules stress protection of both human health and the environment</li> <li>• CERCLA is more explicit in requiring consideration of standards and criteria established under other federal and State laws</li> <li>• Although preliminary cleanup criteria under both rules potentially may be identical, it is possible for the two programs to develop different criteria for the same source/release</li> </ul>

## APPENDIX F: COMPARISON

Description	RCRA Corrective Action	
Evaluating Alternatives and Selecting Remedy	<p>Standard for Remedies (Proposed 40 CFR Section 264.525(a))</p> <ul style="list-style-type: none"> <li>• Protection of human health and the environment</li> <li>• Attainment of media cleanup standards (MCS)</li> <li>• Reduction or elimination, to the extent practical, of further releases that may pose a threat to human health or the environment</li> </ul> <p>Remedy Selection Factors (Proposed 40 CFR Section 264.525(b))</p> <ul style="list-style-type: none"> <li>• Long-term effectiveness and permanence of the alternative, along with the degree of certainty that the alternative will prove successful</li> <li>• Reduction of toxicity, mobility, or volume through treatment</li> <li>• Short-term risks to public health, workers, and the environment and the time required to achieve protection</li> <li>• Ease or difficulty of implementing the alternatives, including technical, administrative, and logistic feasibility</li> <li>• Capital and annual O&amp;M cost and net present worth, and potential future remedial cost</li> </ul>	<p>Threshold C</p> <ul style="list-style-type: none"> <li>• Overall</li> <li>• Compliance</li> </ul> <p>Primary Bal</p> <ul style="list-style-type: none"> <li>• Long-term</li> <li>• the degr</li> <li>• Reductio</li> <li>• Short-term</li> <li>• the time</li> <li>• Ease or</li> <li>• technical</li> <li>• Capital</li> </ul> <p>Modifying C</p> <ul style="list-style-type: none"> <li>• State acc</li> <li>• Commu</li> </ul>
Final Remedy	<p>RCRA Permit Modification and Statement of Basis (Proposed 40 CFR Section 264.526)</p> <ul style="list-style-type: none"> <li>• USEPA or authorized State modifies TSD permit or RCRA Order to require implementation of corrective measure(s); permit modification must follow process described 40 CFR Section 270.41</li> <li>• USEPA or authorized State develops Statement of Basis document to provide general information about corrective measure(s), selection process, and criteria <ul style="list-style-type: none"> <li>• Identifies proposed corrective measure and reasons for it</li> <li>• Describes other corrective measures which were considered</li> <li>• Solicits public review/comment</li> <li>• Provides information addressing public involvement in corrective measure selection process</li> </ul> </li> <li>• General standards and selection factors for corrective measure(s), and guidelines for schedule, cleanup standards, compliance, and permit modifications specified in Proposed 40 CFR Sections 264.525-264.526</li> <li>• Technical requirements, procedures, schedule, and reports specified in TSD permit or RCRA Order</li> <li>• Phased remedies are allowed, but only via TSD permit modifications (Proposed 40 CFR Section 264.526(d))</li> </ul>	<p>Record of D</p> <p>Section 300.</p> <ul style="list-style-type: none"> <li>• Formal, and anal</li> <li>• remedy</li> <li>• Rem</li> <li>• (40 C</li> <li>• USE</li> <li>• cann</li> <li>• ROD rec</li> <li>• response</li> <li>• Army m</li> <li>• within 18</li> <li>• 120(e)2)</li> <li>• the RI/FS</li> </ul>

## APPENDIX F: COMPARISON OF RCRA AND CERCLA ACTIONS (Continued)

Corrective Action	CERCLA Remedial Action	
<p>40 CFR Section 264.525(a)) and the environment standards (MCS) the extent practical, of further at to human health or the</p> <p>40 CFR Section 264.525(b)) permanence of the alternative, inty that the alternative will</p> <p>y, or volume through treatment th, workers, and the ired to achieve protection ting the alternatives, including ogistic feasibility and net present worth, and</p>	<p>Threshold Criteria (40 CFR Section 300.430)</p> <ul style="list-style-type: none"> <li>• Overall protection of human health and the environment</li> <li>• Compliance with ARARs</li> </ul> <p>Primary Balancing Criteria (40 CFR Section 300.430)</p> <ul style="list-style-type: none"> <li>• Long-term effectiveness and permanence of the alternative, along with the degree of certainty that the alternative will prove successful</li> <li>• Reduction of toxicity, mobility, or volume through treatment</li> <li>• Short-term risks to public health, workers, and the environment and the time required to achieve protection</li> <li>• Ease or difficulty of implementing the alternatives, including technical, administrative, and logistic feasibility</li> <li>• Capital and annual O&amp;M cost and net present value</li> </ul> <p>Modifying Criteria (40 CFR Section 300.430)</p> <ul style="list-style-type: none"> <li>• State acceptance</li> <li>• Community acceptance</li> </ul>	<ul style="list-style-type: none"> <li>• RCRA achieve regula the er balanc regula consic</li> <li>• RCRA availa term c estima protec</li> <li>• Both r under</li> <li>• CERCLA accept public of the</li> </ul>
<p>atement of Basis (Proposed 40</p> <p>ifies TSD permit or RCRA n of corrective measure(s); w process described 40 CFR</p> <p>elops Statement of Basis formation about corrective nd criteria ve measure and reasons for it asures which were</p> <p>ient sing public involvement in process factors for corrective chedule, cleanup standards, ations specified in Proposed 40</p> <p>res, schedule, and reports A Order t only via TSD permit Section 264.526(d))</p>	<p>Record of Decision (ROD) and Interagency Agreement (IAG) (40 CFR Section 300.430(f))</p> <ul style="list-style-type: none"> <li>• Formal, legal mechanism for documenting remedy selection process and analyses and policy determinations that support selection of final remedy <ul style="list-style-type: none"> <li>• Remedy selection is joint responsibility of the Army and USEPA (40 CFR Section 300.430(f)(4))</li> <li>• USEPA has authority to unilaterally select remedy if agreement cannot be reached (40 CFR Section 300.430(f)(4))</li> </ul> </li> <li>• ROD requires a Proposed Plan, public participation, and comment response (40 CFR Section 300.430(f))</li> <li>• Army must enter into an IAG or FFA (and ROD must be signed) within 180 days of USEPA's acceptance of RI/FS (CERCLA Part 120(e)2)). However, by DoD policy, the IAG/FFA is initiated early in the RI/FS process.</li> </ul>	<ul style="list-style-type: none"> <li>• Decisi Staten Record provid respon not</li> <li>• Propos provisi decisio specific resolut</li> <li>• Both n if clear substant no-acti costly</li> </ul>

## RCRA AND CERCLA ACTIONS (Continued)

CERCLA Remedial Action	Additional Discussion
<p>a (40 CFR Section 300.430)</p> <p>tion of human health and the environment with ARARs</p> <p>g Criteria (40 CFR Section 300.430)</p> <p>ectiveness and permanence of the alternative, along with certainty that the alternative will prove successful</p> <p>oxicity, mobility, or volume through treatment</p> <p>ks to public health, workers, and the environment and red to achieve protection</p> <p>lity of implementing the alternatives, including inistrative, and logistic feasibility</p> <p>nual O&amp;M cost and net present value</p> <p>1 (40 CFR Section 300.430)</p> <p>ce</p> <p>ceptance</p>	<ul style="list-style-type: none"> <li>• RCRA emphasizes technical effectiveness and achievement of compliance with applicable regulations to ensure protection of human health and the environment, while CERCLA emphasizes balancing a variety of statutory mandates and regulatory requirements with cost-effectiveness considerations</li> <li>• RCRA uses cost estimates to ensure that funds are available to provide appropriate remedies and long-term care; both RCRA and CERCLA use cost estimates to eliminate alternatives which are similar in protectiveness but vary significantly in cost</li> <li>• Both rules allow waiver of enforceable MCS or PRGs under certain circumstances</li> <li>• CERCLA explicitly includes State and community acceptance as evaluation criteria; RCRA includes public participation during the process but not as part of the evaluation criteria</li> </ul>
<p>1 (ROD) and Interagency Agreement (IAG) (40 CFR )</p> <p>mechanism for documenting remedy selection process d policy determinations that support selection of final</p> <p>ection is joint responsibility of the Army and USEPA ction 300.430(f)(4))</p> <p>authority to unilaterally select remedy if agreement ached (40 CFR Section 300.430(f)(4))</p> <p>Proposed Plan, public participation, and comment R Section 300.430(f))</p> <p>r into an IAG or FFA (and ROD must be signed)</p> <p>of USEPA's acceptance of RI/FS (CERCLA Part ever, by DoD policy, the IAG/FFA is initiated early in s.</p>	<ul style="list-style-type: none"> <li>• Decision process is broadly similar, and the RCRA Statement of Basis is analogous to the CERCLA Record of Decision; however, CERCLA specifically provides the Army (as lead agency) with joint responsibility for selecting remedy, while RCRA does not</li> <li>• Proposed corrective action rule contains no specific provisions for permitted facility owners to challenge decision by USEPA or authorized State to require a specific remedy, although there may be dispute resolution clauses in a RCRA Order or FFA/IAG</li> <li>• Both rules allow selection of the no-action alternative if cleanup is impractical or will not reduce risk substantially; CERCLA also allows selection of the no-action alternative if risk is low and cleanup is too costly</li> </ul>

## APPENDIX F: COMPARISON OF

Description	RCRA Corrective Action	
Implementing Remedy	<p>Corrective Measures Design and Implementation (Proposed 40 CFR Sections 264.527-264.529)</p> <ul style="list-style-type: none"> <li>• USEPA or authorized State may require and may need to approve: <ul style="list-style-type: none"> <li>• Detailed construction plans and specifications (Proposed 40 CFR Section 264.527)</li> <li>• Progress reports (Proposed 40 CFR Section 264.528)</li> </ul> </li> <li>• USEPA or authorized State must review progress and has the authority to modify the TSD permit schedule of compliance to require additional corrective measures (Proposed 40 CFR Section 264.529)</li> <li>• Schedule of implementation will be specified in the TSD permit or part 3008(h) Order (Proposed 40 CFR Section 264.525(c))</li> </ul>	<p>Remedial Design</p> <ul style="list-style-type: none"> <li>• USEPA may require remedial design (40 CFR 264.527)</li> <li>• Requirement to submit remedial design to USEPA (40 CFR 264.528)</li> <li>• Generally in selected remedial action</li> <li>• USEPA may require progress reports</li> <li>• ROD must be established for remedial action</li> <li>• On-site remedial action must be completed within 300.435(c))</li> </ul>
On-Site Waste Management	<p>Corrective Action Management Units (CAMUs) (58 FR 8658, February 16, 1993)</p> <ul style="list-style-type: none"> <li>• Designated area at a facility for managing remediation wastes [1] during corrective action</li> <li>• Disposed wastes are not subject to land disposal restrictions; unit is not subject to minimum technology requirements for a new or lateral expansion of a unit</li> </ul> <p>Temporary Units (TUs) (58 FR 8658, February 16, 1993)</p> <ul style="list-style-type: none"> <li>• Tanks and container storage areas used for treatment storage of remediation wastes</li> <li>• Operating time limited to one year or less, although exemptions are possible</li> <li>• Not subject to Subtitle C design, operating or closure standards, although other requirements apply (40 CFR Part 264.533(a) and (c))</li> </ul>	<p>Action-specific off-site waste management</p> <ul style="list-style-type: none"> <li>• RCRA standards for incineration activities</li> </ul>



## APPENDIX F: COMPARISON OF RCRA AND CERCLA ACTIONS (Cont)

RCRA Corrective Action	CERCLA Remedial Action
<p>Measures Design and Implementation (Proposed 40 CFR Sections 264.527-264.529)</p> <p>The authorized State may require and may need to develop and construction plans and specifications (Proposed 40 CFR Section 264.527)</p> <p>Progress reports (Proposed 40 CFR Section 264.528)</p> <p>The authorized State must review progress and has the authority to modify the TSD permit schedule of compliance to include additional corrective measures (Proposed 40 CFR Section 264.529)</p> <p>The implementation will be specified in the TSD permit (40 CFR Part 3008(h) Order (Proposed 40 CFR Section 264.529))</p>	<p>Remedial Design (RD) (40 CFR Section 300.435)</p> <ul style="list-style-type: none"> <li>• USEPA may require and may need to approve detailed plans of remedy (40 CFR Section 300.435(b)(2))</li> <li>• Requirements for the Army to submit design and planning documents to USEPA generally included in the Consent Agreement for the Remedial Action, the FFA, or the IAG</li> </ul> <p>Remedial Action (RA) (40 CFR Section 300.435)</p> <ul style="list-style-type: none"> <li>• Generally involves construction, testing, and implementation of selected remedy in ROD</li> <li>• USEPA may conduct periodic inspections of the RA process</li> <li>• Progress reports may be required under the FFA or IAG</li> <li>• ROD must be formally amended via rulemaking process if final remedial action fundamentally alters the basic features of the selected remedy with respect to scope, performance, or cost (40 CFR Section 300.435(c))</li> <li>• On-site remedial action must begin within 15 months after the ROD is completed (CERCLA Part 120(e)(2))</li> </ul>
<p>On Management Units (CAMUs) (58 FR 8658, February 16, 1993)</p> <p>The area at a facility for managing remediation wastes under corrective action</p> <p>Wastes are not subject to land disposal restrictions; they are subject to minimum technology requirements for a unit expansion of a unit</p> <p>Units (TUs) (58 FR 8658, February 16, 1993)</p> <p>Container storage areas used for treatment storage of wastes</p> <p>Not limited to one year or less, although shorter durations are possible</p> <p>Under Subtitle C design, operating or closure requirements, although other requirements apply (40 CFR Part 264 and (c))</p>	<p>Action-specific ARARs establish controls or restrictions for on- and off-site waste management activities (40 CFR Part 400(g)(iv))</p> <ul style="list-style-type: none"> <li>• RCRA standards (e.g., closure of hazardous waste disposal sites, incineration standards) apply to CERCLA waste management activities</li> </ul>

2

## RCRA AND CERCLA ACTIONS (Continued)

CERCLA Remedial Action	Additional Discussion
<p>RD) (40 CFR Section 300.435)</p> <p>require and may need to approve detailed plans of (40 CFR Section 300.435(b)(2))</p> <p>for the Army to submit design and planning documents generally included in the Consent Agreement for the action, the FFA, or the IAG</p> <p>RA) (40 CFR Section 300.435)</p> <p>volves construction, testing, and implementation of remedy in ROD</p> <p>conduct periodic inspections of the RA process</p> <p>ports may be required under the FFA or IAG</p> <p>formally amended via rulemaking process if final on fundamentally alters the basic features of the selected respect to scope, performance, or cost (40 CFR Section</p> <p>dial action must begin within 15 months after the RI/FS (CERCLA Part 120(e)2))</p>	<ul style="list-style-type: none"> <li>Both processes are similar in deferring many key engineering decisions related to the final remedy</li> <li>Both rules allow flexibility in modifying selected remedies based on technical or practical difficulties (e.g., facility owner cannot get permission to conduct remedial actions beyond facility boundary)</li> <li>CERCLA requires communication with the local community during implementation of the remedy and a formal rulemaking process to make fundamental changes in the remedy; RCRA requires communication with the public for "major" permit modifications, and communication with the public may be negotiated as part of the RCRA Order or FFA/IAG</li> </ul>
<p>ARARS establish controls or restrictions for on- and nagement activities (40 CFR Part 400(g)(iv))</p> <p>ards (e.g., closure of hazardous waste disposal sites, tandards) apply to CERCLA waste management</p>	<ul style="list-style-type: none"> <li>CAMUs/Tus under RCRA allow more flexibility in managing wastes on-site than ARARs under CERCLA</li> <li>CAMUs/TUs may be an ARAR under CERCLA</li> <li>States are not obligated to adopt CAMU/TU rule</li> </ul>

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## APPENDIX F: COMPARISON

Description	RCRA Corrective Action	
Completion of Remedy	<ul style="list-style-type: none"> <li>• Remedy is considered complete when USEPA or authorized State determines the following (Proposed 40 CFR Part 264.530):               <ul style="list-style-type: none"> <li>• Compliance with cleanup standards specified in the TSD permit or RCRA Order is achieved</li> <li>• All actions required to control sources of contamination have been satisfied</li> <li>• Procedures specified for removal, decontamination, closure, or post-closure care of units, equipment, devices, or structures have been complied with.</li> </ul> </li> <li>• USEPA or authorized State may determine that compliance with the remedy requirement(s) is not technically practicable and modify the TSD permit schedule of compliance accordingly (Proposed 40 CFR Part 264.531)</li> </ul>	Remedial ac determines t <ul style="list-style-type: none"> <li>• Contami environr</li> <li>• Specific complete</li> <li>• Remedy</li> <li>• Remaini</li> </ul>
Completion of Remedial Process	<ul style="list-style-type: none"> <li>• RCRA Permit Modification to end corrective action for permitted facilities               <ul style="list-style-type: none"> <li>• USEPA or authorized State modifies TSD permit to terminate corrective action according to Class III procedures of 40 CFR Part 270.42</li> <li>• Class III permit modification requires public notification and a period of public comment</li> </ul> </li> <li>• Revocation of RCRA Order for interim status facilities</li> </ul>	Deletion fro <ul style="list-style-type: none"> <li>• Facility</li> <li>• The</li> <li>• requi</li> <li>• Cont</li> <li>• the e</li> <li>• NPL delc</li> <li>• commen</li> <li>• CERCLA</li> <li>• facilities</li> <li>• Attai</li> <li>• unlin</li> <li>• Haza</li> <li>• unlin</li> <li>• level</li> </ul>

## APPENDIX F: COMPARISON OF RCRA AND CERCLA ACTIONS (Continued)

Corrective Action	CERCLA Remedial Action	
<p>Complete when USEPA or authorized State determines the following (Proposed 40 CFR Part 300.435(f))</p> <ul style="list-style-type: none"> <li>Standards specified in the TSD are achieved</li> <li>Control sources of contamination</li> <li>Removal, decontamination, and disposal of units, equipment, devices, are completed</li> <li>Remedy is fully operational and performing to design specifications</li> <li>Remaining activities only involve operation and maintenance</li> </ul>	<p>Remedial action is considered complete when USEPA or authorized State determines the following (40 CFR Part 300.435(f)):</p> <ul style="list-style-type: none"> <li>Contamination is reduced to levels protective of human health and the environment</li> <li>Specific cleanup levels and remedial activities specified in ROD are completed</li> <li>Remedy is fully operational and performing to design specifications</li> <li>Remaining activities only involve operation and maintenance</li> </ul>	<p>Although termination goal has been achieved</p>
<p>End corrective action for Class III facilities</p> <p>USEPA may determine that compliance with the schedule of compliance (40 CFR Part 264.531)</p> <p>USEPA may modify TSD permit to allow for Class III facilities according to 270.42</p> <p>USEPA requires public notification for interim status facilities</p>	<p>Deletion from NPL (40 CFR Part 300.425(e))</p> <ul style="list-style-type: none"> <li>Facility is eligible for NPL deletion when: <ul style="list-style-type: none"> <li>The Army and USEPA or authorized State determine that all required response actions have been implemented</li> <li>Contamination is reduced to levels protective of human health and the environment</li> </ul> </li> <li>NPL deletion is a rulemaking process that includes a period of public comment</li> <li>CERCLA Part 121(c) requires USEPA to conduct 5-year reviews at facilities where: <ul style="list-style-type: none"> <li>Attainment of cleanup levels specified in ROD will not allow unlimited use or unrestricted access</li> <li>Hazardous substances will remain at levels on-site that prevent unlimited use or unrestricted access, and attainment of acceptable levels will take more than 5 years</li> </ul> </li> </ul>	<p>Both rulemaking and public comment</p>

## RCRA AND CERCLA ACTIONS (Continued)

CERCLA Remedial Action	Additional Discussion
<p>is considered complete when USEPA or authorized State following (40 CFR Part 300.435(f)):</p> <p>n is reduced to levels protective of human health and the</p> <p>up levels and remedial activities specified in ROD are</p> <p>ly operational and performing to design specifications</p> <p>tivities only involve operation and maintenance</p>	<p>Although both rules present general criteria for terminating the remedy, neither rule provides explicit "stopping rules" for determining whether a given cleanup goal has been achieved</p>
<p>L (40 CFR Part 300.425(e))</p> <p>ible for NPL deletion when:</p> <p>and USEPA or authorized State determine that all</p> <p>sponse actions have been implemented</p> <p>tion is reduced to levels protective of human health and</p> <p>ment</p> <p>s a rulemaking process that includes a period of public</p> <p>121(c) requires USEPA to conduct 5-year reviews at</p> <p>:</p> <p>of cleanup levels specified in ROD will not allow</p> <p>se or unrestricted access</p> <p>substances will remain at levels on-site that prevent</p> <p>se or unrestricted access, and attainment of acceptable</p> <p>ake more than 5 years</p>	<p>Both rules require public notification and a period of public comment to formally terminate the process</p>

## APPENDIX F: COMPARISON C

Description	RCRA Corrective Action	
Follow-On Activities	<p>None specified (process is terminated with permit modification or revocation of RCRA Order)</p> <ul style="list-style-type: none"> <li>• Closure/post closure activities are required for approximately 30 years after termination of RCRA permit or interim status</li> <li>• USEPA or authorized states may extend the post-closure care period well beyond 30 years if determined to be necessary to protect human health and the environment (RCRA Part 264.117(a)(2)(ii))</li> </ul>	<ul style="list-style-type: none"> <li>• Operation</li> <li>• Gener</li> <li>struct</li> <li>• Nomin</li> <li>down</li> <li>• Natural R</li> <li>107(f) and</li> <li>• If natu</li> <li>trustee</li> <li>• Natur</li> <li>and in</li> <li>• Respo</li> <li>CFR P</li> </ul>

[1] Remediation wastes are defined in 40 CFR Part 260.10 as all solid and hazardous wastes, and a or which themselves exhibit a hazardous waste characteristic, that are managed for the purpose of impl remediation wastes may originate only from within the facility boundary, but may include waste manag cannot be used to manage wastes generated from ongoing production processes or other industrial activ cleaning up a release originating on-site).

[2] An NRDA is the process by which Natural Resource Trustees determine monetary damages for include the states, certain Federal agencies, and Native American Tribes. Trustees' authority and respo Federal regulations. The Department of Interior and the National Oceanic and Atmospheric Administrat procedures for conducting NRDA's.

## APPENDIX F: COMPARISON OF RCRA AND CERCLA ACTIONS (Continued)

Corrective Action	CERCLA Remedial Action	
<p>ated with permit modification or</p> <p>s are required for approximately RCRA permit or interim status may extend the post-closure care if determined to be necessary to environment (RCRA Part</p>	<ul style="list-style-type: none"> <li>• Operation and Maintenance (O&amp;M) 40 CFR Section 300.435(f) <ul style="list-style-type: none"> <li>• Generally occurs at facilities where remedy involves a permanent structure used to contain contaminated materials</li> <li>• Nominal duration is 30 years, but USEPA may revise this up or down to address site-specific conditions</li> </ul> </li> <li>• Natural Resource Damage Assessment (NRDA) [2] (CERCLA Part 107(f) and Clean Water Act Part 300(f)(5)) <ul style="list-style-type: none"> <li>• If natural resources are injured by the release, natural resource trustees may initiate appropriate actions</li> <li>• Natural resource trustees are identified in 40 CFR Part 300.600 and include the Secretary of Energy</li> <li>• Responsibilities of natural resource trustees are presented in 40 CFR Part 300.615</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• CER</li> <li>• reme</li> <li>• RCR</li> <li>• natur</li> <li>• RCR</li> <li>• trustee</li> <li>• RCR</li> </ul>

art 260.10 as all solid and hazardous wastes, and all media (including ground water, surface water, soils, and sediments) are characteristic, that are managed for the purpose of implementing corrective action requirements under 40 CFR Part 264.101 and the facility boundary, but may include waste managed in implementing RCRA Section 3004(v) or Section 3008(h) for releasing production processes or other industrial activities (i.e., "as-generated wastes") or to manage off-site wastes brought c

source Trustees determine monetary damages for injury to natural resources caused by released of hazardous substances c the American Tribes. Trustees' authority and responsibilities are established by the Clean Water Act, Superfund (CERCLA) and the National Oceanic and Atmospheric Administration (NOAA) have also promulgated NRDA regulations which provide

## APPENDIX G

### TABLE G-1. DEFINITION OF TREATMENT TERMS

TECHNOLOGY	DESCRIPTION
<b>SOIL, SEDIMENT AND SLUDGE</b>	
<b><i>In Situ Biological Treatment</i></b>	
<b>Biodegradation</b>	The activity of naturally occurring microbes is stimulated by circulating water-based solutions through contaminated soils to enhance in situ biological degradation of organic contaminants. Nutrients, oxygen, or other amendments may be used to enhance biodegradation and contaminant desorption from subsurface materials.
<b>Bioventing</b>	Oxygen is delivered to contaminated unsaturated soils by forced air movement (either extraction or injection of air) to increase oxygen concentrations and stimulate biodegradation.
<b>White Rot Fungus</b>	White rot fungus has been reported to degrade a wide variety of organopollutants by using their lignin-degrading or wood-rotting enzyme system. Two different treatment configurations have been tested for white rot fungus, in situ and bioreactor.
<b><i>In Situ Physical/Chemical Treatment</i></b>	
<b>Pneumatic Fracturing</b>	Pressurized air is injected beneath the surface to develop cracks in low permeability and over-consolidated sediments, opening new passageways that increase the effectiveness of many in situ processes and enhance extraction efficiencies.
<b>Soil Flushing</b>	Water, or water containing an additive to enhance contaminant solubility, is applied to the soil or injected into the groundwater to raise the water table into the contaminated soil zone. Contaminants are leached into the groundwater, which is then extracted and treated.
<b>Soil Vapor Extraction</b>	Vacuum is applied through extraction wells to create a pressure/concentration gradient that induces gas-phase volatiles to diffuse through soil to extraction wells. The process includes a system for handling off-gases. This technology also is known as in situ soil venting, in situ volatilization, enhanced volatilization, or soil vacuum extraction.
<b>Hot Air Injection</b>	Heated air is injected and circulated through the subsurface. The heated air vaporizes volatile constituents so they can be extracted and captured for further treatment or recycling.
<b>Solidification/Stabilization</b>	Contaminants are physically bound or enclosed within a stabilized mass (solidification), or chemical reactions are induced between the stabilizing agent and contaminants to reduce their mobility (stabilization).
<b>Contained Recovery of Oily Wastes</b>	Process displaces oily wastes with steam and hot water. The contaminated oils are swept into a more permeable area and are pumped out of the soil.
<b>Cyanide Oxidation</b>	Organic cyanides are oxidized to less hazardous compounds through chemical reactions.
<b><i>In Situ Thermal Treatment</i></b>	
<b>Thermally Enhanced Soil Vapor Extraction</b>	Steam/hot air injection or electric/radio frequency heating is used to increase the mobility of volatiles and facilitate extraction. The process includes a system for handling off-gases.
<b>Vitrification</b>	Electrodes for applying electricity are used to melt contaminated soils and sludges, producing a glass and crystalline structure with very low leaching characteristics.



## APPENDIX G

**TABLE G-1. DEFINITION OF TREATMENT TERMS (Continued)**

TECHNOLOGY	DESCRIPTION
<b><i>Ex Situ Biological Treatment (assuming excavation)</i></b>	
<b>Composting</b>	Contaminated soil is excavated and mixed with bulking agents and organic amendments such as wood chips, animal and vegetative wastes, which are added to enhance the porosity and organic content of the mixture to be decomposed.
<b>Controlled Solid Phase Biological Treatment</b>	Excavated soils are mixed with soil amendments and placed in aboveground enclosures. Processes include prepared treatment beds, biotreatment cells, soil piles, and composting.
<b>Landfarming</b>	Contaminated soils are applied onto the soil surface and periodically turned over or tilled into the soil to aerate the waste.
<b>Slurry Phase Biological Treatment</b>	An aqueous slurry is created by combining soil or sludge with water and other additives. The slurry is mixed to keep solids suspended and microorganisms in contact with the soil contaminants. Upon completion of the process, the slurry is dewatered and the treated soil is dispersed.
<b><i>Ex Situ Physical/Chemical Treatment (assuming excavation)</i></b>	
<b>Chemical Reduction/Oxidation</b>	Reduction/oxidation chemically converts hazardous contaminants to non-hazardous or less toxic compounds that are more stable, less mobile, and/or inert. The oxidizing agents most commonly used are ozone, hydrogen peroxide, hypochlorites, chlorine, and chlorine dioxide.
<b>Base Catalyzed Decomposition Dehalogenation</b>	Contaminated soil is screened, processed with a crusher and pug mill, and mixed with NaOH and catalysts. The mixture is heated in a rotary reactor to dehalogenate and partially volatilize the contaminants.
<b>Glycolate Dehalogenation</b>	An alkaline polyethylene glycol (APEG) reagent is used to dehalogenate halogenated aromatic compounds in a batch reactor. Potassium polyethylene glycol (KPEG) is the most common APEG reagent. Contaminated soils and the reagent are mixed and heated in a treatment vessel. In the APEG process, the reaction causes the polyethylene glycol to replace halogen molecules and render the compound non-hazardous. For example, the reaction between chlorinated organics and KPEG causes replacement of a chlorine molecule and results in a reduction in toxicity.
<b>Physical Separation</b>	This process removes contaminants from a medium in order to reduce volume of material requiring treatment.
<b>Soil Washing</b>	Contaminants sorbed onto fine soil particles are separated from bulk soil in an aqueous-based system on the basis of particle size. The wash water may be augmented with a basic leaching agent, surfactant, pH adjustment, or chelating agent to help remove organics and heavy metals.
<b>Soil Vapor Extraction</b>	A vacuum is applied to a network of aboveground piping to encourage volatilization of organics from the excavated media. The process includes a system for handling off-gases.
<b>Solidification/Stabilization</b>	Contaminants are physically bound or enclosed within a stabilized mass (solidification), or chemical reactions are induced between the stabilizing agent and contaminants to reduce their mobility (stabilization).

## APPENDIX G

**TABLE G-1. DEFINITION OF TREATMENT TERMS (Continued)**

TECHNOLOGY	DESCRIPTION
<b>Solvent Extraction</b>	Waste and solvent are mixed in an extractor, dissolving the organic contaminant into the solvent. The extracted organics and solvent are then placed in a separator, where the contaminants and solvent are separated for treatment and further use.
<b><i>Ex Situ Thermal Treatment (assuming excavation)</i></b>	
<b>High Temperature Thermal Desorption</b>	Wastes are heated to 315-538 °C (600-1,000 °F) to volatilize water and organic contaminants. A carrier gas or vacuum system transports volatilized water and organics to the gas treatment system.
<b>Hot Gas Decontamination</b>	The process involves raising the temperature of the contaminated equipment or material for a specified period of time. The gas effluent from the material is treated in an afterburner system to destroy all volatilized contaminants.
<b>Incineration</b>	High temperatures, 871-1,204 °C (1,600- 2,200 °F), are used to combust (in the presence of oxygen) organic constituents in hazardous wastes.
<b>Low-Temperature Thermal Desorption</b>	Wastes are heated to 93-315 °C (200-600 °F) to volatilize water and organic contaminants. A carrier gas or vacuum system transports volatilized water and organics to the gas treatment system.
<b>Plasma High Temperature Metals Recovery</b>	This is a thermal treatment process that purges contaminants from solids and soils as metal fumes and organic vapors. The organic vapors can be burned as fuel and the metal fumes can be recovered and recycled.
<b>Open Burn/Open Detonation (OB/OD)</b>	In OB operations, explosives or munitions are destroyed by self-sustained combustion, which is ignited by an external source, such as flame, heat, or a detonatable wave (that does not result in a detonation). In OD operations, detonatable explosives and munitions are destroyed by a detonation, which is initiated by the detonation of a disposal charge.
<b>Pyrolysis</b>	Chemical decomposition is induced in organic materials by heat in the absence of oxygen. Organic materials are transformed into gaseous components and a solid residue (coke) containing fixed carbon and ash.
<b>Vitrification</b>	Contaminated soils and sludges are melted at high temperature to form a glass and crystalline structure with very low leaching characteristics.

## APPENDIX G

**TABLE G-1. DEFINITION OF TREATMENT TERMS (Continued)**

TECHNOLOGY	DESCRIPTION
<b>Other Treatment</b>	
<b>Excavation and Off-Site Disposal</b>	Contaminated material is removed and transported to permitted off-site treatment and disposal facilities. Pretreatment may be required.
<b>Natural Attenuation</b>	Natural subsurface processes—such as dilution, volatilization, biodegradation, adsorption, and chemical reactions with subsurface materials—are allowed to reduce contaminant concentrations to acceptable levels.
<b>GROUNDWATER, SURFACE WATER, AND LEACHATE</b>	
<b>In Situ Biological Treatment</b>	
<b>Co-Metabolic Processes</b>	An emerging application involves the injection of water containing dissolved methane and oxygen into groundwater to enhance methanotrophic biological degradation.
<b>Nitrate Enhancement</b>	Nitrate is circulated throughout groundwater contamination zones as an alternative electron acceptor for biological oxidation of organic contaminants by microbes.
<b>Oxygen Enhancement with Air Sparging</b>	Air is injected under pressure below the water table to increase groundwater oxygen concentrations and enhance the rate of biological degradation of organic contaminants by naturally occurring microbes.
<b>Oxygen Enhancement with Hydrogen Peroxide</b>	A dilute solution of hydrogen peroxide is circulated throughout a contaminated groundwater zone to increase the oxygen content of groundwater and enhance the rate of aerobic biodegradation of organic contaminants by microbes.
<b>In Situ Physical/Chemical Treatment</b>	
<b>Air Sparging</b>	Air is injected into saturated matrices to remove contaminants through volatilization.
<b>Directional Wells (enhancement)</b>	Drilling techniques are used to position wells horizontally, or at an angle, in order to reach contaminants not accessible via direct vertical drilling.
<b>Dual Phase Extraction</b>	A high vacuum system is applied to simultaneously remove liquid and gas from low permeability or heterogeneous formations.
<b>Free Product Recovery</b>	Undissolved liquid-phase organics are removed from subsurface formations, either by active methods (e.g., pumping) or a passive collection system.
<b>Hot Water or Steam Flushing/Stripping</b>	Steam is forced into an aquifer through injection wells to vaporize volatile and semivolatile contaminants. Vaporized components rise to the unsaturated zone where they are removed by vacuum extraction and then treated.
<b>Hydrofracturing (enhancement)</b>	Injection of pressurized water through wells cracks low permeability and over-consolidated sediments. Cracks are filled with porous media that serve as avenues for bioremediation or to improve pumping efficiency.
<b>Passive Treatment Walls</b>	These barriers allow the passage of water while prohibiting the movement of contaminants by employing such agents as chelators (ligands selected for their specificity for a given metal), sorbents, microbes, and others.

## APPENDIX G

**TABLE G-1. DEFINITION OF TREATMENT TERMS (Continued)**

TECHNOLOGY	DESCRIPTION
<b>Slurry Walls</b>	These subsurface barriers consist of vertically excavated trenches filled with slurry. The slurry, usually a mixture of bentonite and water, hydraulically shores the trench to prevent collapse and retards groundwater flow.
<b>Vacuum Vapor Extraction</b>	Air is injected into a well, lifting contaminated groundwater in the well and allowing additional groundwater flow into the well. Once inside the well, some of the VOCs in the contaminated groundwater are transferred from the water to air bubbles, which rise and are collected at the top of the well by vapor extraction.
<b><i>Ex Situ Biological Treatment (assuming pumping)</i></b>	
<b>Bioreactors</b>	Contaminants in extracted groundwater are put into contact with microorganisms in attached or suspended growth biological reactors. In suspended systems, such as activated sludge, contaminated groundwater is circulated in an aeration basin. In attached systems, such as rotating biological contractors and trickling filters, microorganisms are established on an inert support matrix.
<b><i>Ex Situ Physical/Chemical Treatment (assuming pumping)</i></b>	
<b>Air Stripping</b>	Volatile organics are partitioned from groundwater by increasing the surface area of the contaminated water exposed to air. Aeration methods include packed towers, diffused aeration, tray aeration, and spray aeration.
<b>Filtration</b>	Filtration isolates solid particles by running a fluid stream through a porous medium. The driving force is either gravity or a pressure differential across the filtration medium.
<b>Ion Exchange</b>	Ion exchange removes ions from the aqueous phase by exchange with innocuous ions on the exchange medium.
<b>Liquid Phase Carbon Adsorption</b>	Groundwater is pumped through a series of canisters or columns containing activated carbon to which dissolved organic contaminants adsorb. Periodic replacement or regeneration of saturated carbon is required.
<b>Precipitation</b>	This process transforms dissolved contaminants into an insoluble solid, facilitating the contaminant's subsequent removal from the liquid phase by sedimentation or filtration. The process usually uses pH adjustment, addition of a chemical precipitant, and flocculation.
<b>Surfactant Flushing</b>	Surfactant flushing of non-aqueous phase liquids (NAPL) increases the solubility and mobility of contaminants in water, so that the NAPL can be biodegraded more easily in the aquifer or recovered for treatment aboveground by a pump-and-treat system.
<b>UV Oxidation</b>	Ultraviolet (UV) radiation, ozone, and/or hydrogen peroxide are used to destroy organic contaminants as water flows into a treatment tank. An ozone destruction unit is used to treat off-gases from the treatment tank.
<b><i>Other Treatment</i></b>	
<b>Natural Attenuation</b>	Natural subsurface processes—such as dilution, volatilization, biodegradation, adsorption, and chemical reactions with subsurface materials—are allowed to reduce contaminant concentrations to acceptable levels.

## APPENDIX G

**TABLE G-1. DEFINITION OF TREATMENT TERMS (Continued)**

TECHNOLOGY	DESCRIPTION
<b>AIR EMISSIONS/OFF-GAS TREATMENT</b>	
<b>Biofiltration</b>	Vapor-phase organic contaminants are pumped through a soil bed and sorb to the soil surface where they are degraded by microorganisms in the soil.
<b>High Energy Corona</b>	The HEC process uses high-voltage electricity to destroy VOCs at room temperature.
<b>Membrane Separation</b>	This organic vapor/air separation technology involves the preferential transport of organic vapors through a nonporous gas separation membrane (a diffusion process analogous to putting hot oil on a piece of waxed paper).
<b>Oxidation</b>	Organic contaminants are destroyed in a high temperature 1,000 ° C (1,832 F) combustor. Trace organics in contaminated air streams are destroyed at lower temperatures, 450 C (842 F), than conventional combustion by passing the mixture through a catalyst.
<b>Vapor Phase Carbon Adsorption</b>	Off-gases are pumped through a series of canisters or columns containing activated carbon to which organic contaminants adsorb. Periodic replacement or regeneration of saturated carbon is required.

Source: Adapted from "Remediation Technologies Screening Matrix and Reference Guide, Second Edition, Prepared by the DoD Environmental Technology Transfer Committee, October 1994"

TABLE G-2. TREATMENT TECHNOLOGIES SCREENING MATRIX

Technology	Development Status	Easily Available	Residuals Produced	Treatment Train (excludes off-gas treatment)	Contaminants Best Treated					Relative Overall Cost	O&M or Capital Cost Intensive
					VOCs	SVOCs	Fuels	Inorganics	Explosives		
SOIL, SEDIMENT, AND SLUDGE											
In Situ Biological Treatment											
Biodegradation	Full	✓	None	No	✓	✓	✓		✓	Medium	O&M
Bioventing	Full	✓	None	No	✓	✓	✓			Low	Neither
White Rot Fungus	Pilot		None	No					✓	Medium	O&M
In Situ Physical/Chemical Treatment											
Pneumatic Fracturing (enhancement)	Pilot		None	Yes						Low	Neither
Soil Flushing	Pilot	✓	Liquid	No	✓			✓		Inadequate Info	O&M
Soil Vapor Extraction (in Situ)	Full	✓	Liquid	No	✓		✓			Low	O&M
Solidification/Stabilization	Full	✓	Solid	No				✓		Low	CAP
In Situ Thermal Treatment											
Thermally Enhanced SVE	Full		Liquid	No		✓				Medium	Both
Vitrification	Pilot		Liquid	No				✓		High	Both
Ex Situ Biological Treatment (assuming excavation)											
Composting	Full	✓	None	No	✓		✓		✓	Low	Neither
Controlled Solid Phase Bio-Treatment	Full	✓	None	No	✓		✓		✓	Low	Neither
Landfarming	Full	✓	None	No	✓		✓			Low	Neither
Slurry Phase Bio-Treatment	Full		None	No	✓		✓		✓	Medium	Both
Ex Situ Physical/Chemical Treatment (assuming excavation)											
Chemical Reduction/Oxidation	Full	✓	Solid	Yes				✓		Medium	Neither
Dehalogenation (BCD)	Full		Vapor	No		✓				Inadequate Info	Inadequate Info
Dehalogenation (Glycolate)	Full		Liquid	No		✓				High	Both
Soil Washing	Full		Solid/Liquid	Yes		✓	✓	✓	✓	Medium	Both
Soil Vapor Extraction (Ex Situ)	Full	✓	Liquid	No	✓					Low	Neither
Solidification/Stabilization	Full	✓	Solid	No				✓		Low	CAP
Solvent Extraction (chemical extraction)	Full		Liquid	Yes		✓			✓	High	Both

TABLE G-2. TREATMENT TECHNOLOGIES SCREENING MATRIX (Continued)

Technology	Development Status	Easily Available	Residuals Produced	Treatment Train (excludes off-gas treatment)	Contaminants Best Treated					Relative Overall Cost	O&M or Capital Cost Intensive
					VOCs	SVOCs	Fuels	Inorganics	Explosives		
Ex Situ Thermal Treatment (assuming excavation)											
High Temperature Thermal Desorption	Full	✓	Liquid	Yes	✓					Medium	Both
Hot Gas Decontamination	Pilot		None	No					✓	Low	Both
Incineration	Full	✓	Liquid/Solid	No					✓	High	Both
Low Temperature Thermal Desorption	Full	✓	Liquid	Yes	✓				✓	Low	Both
Open Burn/Open Detonation	Full	✓	Solid	No					✓	Low	Both
Pyrolysis	Full		Liquid/Solid	No		✓				High	Both
Vitrification	Full		Liquid	No						High	Both
Other Treatment											
Excavation, Retrieval, and Off-Site	Not Applicable	✓	Not Applicable	No						High	Neither
Natural Attenuation	Not Applicable	✓	None	No	✓	✓	✓			Low	Neither
GROUNDWATER, SURFACE WATER, AND LEACHATE											
In Situ Biological Treatment											
Co-metabolic Treatment	Pilot		None	No	✓					Medium	O&M
Nitrate Enhancement	Pilot		None	No	✓	✓	✓			Low	Neither
Oxygen Enhancement with Air Sparging	Full	✓	None	No	✓	✓	✓			Low	Neither
Oxygen Enhancement with H2O2	Full	✓	None	No	✓	✓	✓			Medium	O&M
In Situ Physical/Chemical Treatment											
Air Sparging	Full	✓	Vapor	Yes	✓					Low	Neither
Directional Wells (Enhancement)	Full		Not Applicable	Yes						Inadequate Info	Neither
Dual Phase Extraction	Full	✓	Liquid/Vapor	Yes	✓		✓			Medium	O&M
Free Product Recovery	Full	✓	Liquid	No		✓	✓			Low	Neither
Hot Water or Steam Flushing/Stripping	Pilot		Liquid/Vapor	Yes		✓	✓			Medium	CAP
Hydrofracturing (Enhancement)	Pilot		None	Yes						Medium	Neither
Passive Treatment Wells	Pilot		Solid	No					✓	Inadequate Info	CAP
Slurry Wells (Containment Only)	Full	✓	Not Applicable	NA	✓	✓				Low	CAP
Vacuum Vapor Extraction	Pilot		Liquid/Vapor	No	✓		✓			Medium	CAP

**TABLE G-2. TREATMENT TECHNOLOGIES SCREENING MATRIX (Continued)**

Technology	Development Status	Easily Available	Residuals Produced	Treatment Train (excludes off-gas treatment)	Contaminants Best Treated					Relative Overall Cost	O&M or Capital Cost Intensive
					VOCs	SVOCs	Fuels	Inorganics	Explosives		
Ex Situ Biological Treatment (assuming pumping)											
Bioreactors	Full	✓	Solid	No	✓	✓	✓			Low	CAP
Ex Situ Physical/Chemical Treatment (assuming pumping)											
Air Stripping	Full	✓	Liquid/Vapor	No	✓					Low	O&M
Filtration	Full	✓	Solid	Yes				✓		Low	Neither
Ion Exchange	Full	✓	Solid	Yes				✓		Low	Neither
Liquid Phase Carbon Adsorption	Full	✓	Solid	No	✓	✓			✓	High	O&M
Precipitation	Full	✓	Solid	Yes				✓		Low	Neither
UV Oxidation	Full	✓	None	No	✓	✓	✓	✓	✓	Medium	Both
Other Treatment											
Natural Attenuation	Not Applicable	✓	None	No	✓	✓	✓	✓		Low	Neither
AIR EMISSIONS/OFF-GAS TREATMENT											
Biofiltration	Full		None	Not Applicable	✓			✓		Medium	Neither
High Energy Corona	Pilot		None	Not Applicable	✓	✓		✓		Medium	Inadequate Info
Membrane Separation	Pilot		None	Not Applicable	✓					Medium	Inadequate Info
Oxidation	Full	✓	None	Not Applicable	✓	✓		✓		Low	Neither
Vapor Phase Carbon Adsorption	Full	✓	Solid	Not Applicable	✓	✓	✓	✓	✓	Low	Neither

Source: Adapted from "Remediation Technologies Screening Matrix and Reference Guide, 2<sup>nd</sup> Edition, DoD Environmental Technology Transfer Committee, October 1994."



## APPENDIX H

### DECISION DOCUMENT OUTLINE

#### 1. PURPOSE

This decision document describes the selected action to \_\_\_\_\_ (state action) \_\_\_\_\_ at the \_\_\_\_\_ (name of site) \_\_\_\_\_ at \_\_\_\_\_ (installation) \_\_\_\_\_, chosen in accordance with the CERCLA as amended by the SARA, the NCP, RCRA, and AR 200-1, as applicable.

*Give a brief description of the site, including DSERTS number, type of operation that caused a release, dates the site operated, and the hydrogeologic setting. Also, briefly describe the nature and extent of contamination and how the site proposes a risk to human health and the environment. State what action/remedy has been selected and how the selected action will eliminate or reduce the risk to human health and the environment.*

This removal/interim remedial/remedial action alternative was selected by \_\_\_\_\_ (installation) \_\_\_\_\_, with support from \_\_\_\_\_ (State or USEPA) \_\_\_\_\_.

#### 2. SITE RISK

*Give a brief description of the results of any risk assessments or risk considerations at the site. Discussion should, at a minimum, address exceedence of state and Federal maximum contaminant levels for the given media of concern, exposure pathways, known or potential health or ecological effects of contaminant, and overall risk which could result from the contamination at the site if no remedial action were taken. Do not include relative risk site evaluations as a measure of risk for a decision document.*

#### 3. REMEDIAL ALTERNATIVES

*Briefly describe the remedial alternatives considered, the selected remedial alternative, and provide an explanation/rationale of why the remedial method was selected and the expected goals or long-term effectiveness of the remedy.. State negotiated cleanup levels/goals and any planned remedial action operations and monitoring.*

*If desired, or deemed necessary, reference any technical documents supporting this decision, i.e., "The alternative(s) summarized here are described in the remedial investigation and feasibility study (RI/FS) report dated \_\_\_\_\_ which should be consulted for a more detailed description of all the alternatives".*

#### **4. PUBLIC/COMMUNITY INVOLVEMENT**

At a minimum, describe what steps were taken to involve the public in the selection of the remedy. Unless an emergency situation exists, as defined by the removal action criteria in the NCP, part 300.415(b) (2), the public is afforded an opportunity to review and comment on any proposed remedial action.

#### **5. DECLARATION**

*See attached declaration statements. Choose the declaration statement that best describes the site and situation.*

#### **6. APPROVAL AND SIGNATURE**

*Re-state the selected alternative, the total cost of the action and the appropriate approval authority for the action. The appropriate approval authority is based on the cost of the action described in the decision.*

- a. The ACSIM, approves all DDs greater than \$6 million..
- b. The MACOM commander approves DDs between \$2 million and \$6 million.
- c. The Installation Commander approves DDs less than \$2 million.

## DECLARATION STATEMENTS - SECTION 5

**1. When the selected remedy satisfies the statutory preference for treatment as a principal element, by treating at least the principal threat(s) posed by the site, the declaration should state:**

"The selected remedy is protective of human health and the environment, attains Federal and State requirements that are applicable or relevant and appropriate to this interim remedial action (or removal) [or "a waiver can be justified for the Federal or State applicable or relevant and appropriate requirement that will not be met"], and is cost effective. This remedy satisfies the statutory preference for remedies that employ treatment that reduces toxicity, mobility or volume as a principal element and utilizes permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable."

**2. When the selected remedy for the site involves little or no treatment to reduce toxicity, mobility or volume of contaminants, that is, treatment is not utilized to address the principal threat(s) posed by the site, CERCLA requires a statement explaining why such a remedial action is not chosen. The declaration in this case should state:**

"The selected remedy is protective of human health and the environment, attains Federal and State requirements that are applicable or relevant and appropriate to this interim remedial action (or removal) [or "a waiver can be justified for the Federal or State applicable or relevant and appropriate requirement that will not be met"], and is cost effective. This remedy utilizes permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable for this site. However, because treatment of the principal threats of the site was not found to be practicable [or "within the limited scope of this action"], this remedy does not satisfy the statutory preference for treatment as a principal element of the remedy." This must be followed by the rationale for this finding based on the specific factors used to determine that treatment is either impracticable or not within the limited scope of this action. In addition, a brief statement that past or future operable units will meet the statutory preference for treatment should be included when appropriate.

**3. If the remedy will leave hazardous substances on-site above health-based levels, the Declaration should include the following:**

"Because this remedy will result in hazardous substances remaining on-site above levels that allow for unlimited use and unrestricted exposure, a review will be conducted within five years after commencement of remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment."

**4. If the remedy will not leave hazardous substances on-site above health-based levels, the Declaration should include the following:**

"Because this remedy will not result in hazardous substances remaining on-site above levels that allow for unlimited use and unrestricted exposure, the five-year review will not apply to this action".

**EXAMPLE**  
**DECISION DOCUMENT FOR A**  
**SOIL REMOVAL**

**COOLVILLE ARMY DEPOT,**  
**ALABAMA**

**1. PURPOSE**

This decision document describes the selected action to remove contaminated soils at the Acid Pond site at Coolville Army Depot, Alabama. This action was chosen in accordance with the CERCLA as amended by the SARA, the NCP, RCRA and AR 200-1, as applicable.

The Acid Pond site (DSERTS number CVAD-13) contains two unlined ponds surrounded by earth berms located within a heavily wooded area.. The ponds were in operation from 1949 until 1973. It is reported that the ponds received acid wastes from batteries, shell de-rusting operations, and approximately 17,000 mustard-filled projectiles (155mm) from a reconditioning operation in 1955. A tributary to Lake Eric drains to the south along the base of the slope west of the ponds. Lake Eric is the water supply for Coolville Army Depot.

Elevated levels of arsenic, cadmium, chromium, lead, selenium in soils, surface water and ground water near the site indicate that contamination is migrating from the Acid Pond site. Given the close proximity of the Acid Pond site to the installation water supply (Lake Eric), the decision was made to remove the contaminated soils (the source of contamination to the surface water and ground water), regrade the site, and monitor the ground water.

This removal action alternative was selected by the Army with support from the Alabama Department of Environmental Management and the Region IV, U.S. Environmental Protection Agency (USEPA).

**2. SITE RISK**

Investigation of this site began in 1982. At that time low levels of zinc and nitrite/nitrate were detected in ground water and chromium and lead were detected in downgradient surface-water samples. In 1989, maximum concentrations of arsenic, cadmium and chromium in soil from the site exceeded risk-specific dose values for carcinogens. Ground water at the site also exceeded state and federal maximum contamination levels for chromium, lead and selenium. In 1994, continued investigation determined that concentrations of contaminants increased in surface water and ground water.

Area drainage from the Acid Pond site occurs primarily by surface runoff into a tributary west of the ponds that drains south into Lake Eric. Lake Eric is located approximately 800 feet from the Acid Pond site. Potential receptors of contamination from the Acid Pond site are installation personnel (from the water supply provided by Lake Eric), employees working near the site, cattle, deer and small game animals, as well as aquatic life.

### 3. REMEDIAL ALTERNATIVES

Remedial alternatives proposed from the Corrective Measures Study and the Interim Remedial Action Study for the Acid Pond site were:

-- No Action. This action does not prevent the continued migration of contaminants from the soil to the surface water and groundwater, therefore, the potential risk of exposure through the installation water supply remains. Potential exposure to installation personnel working near the site and exposure to the ecology also remains.

-- Institutional controls (site fencing and monitoring). This action would provide adequate protection of facility personnel working near the site and to several ecological factors, however, since the source of contamination would remain as well as the migration pathways, the installation water supply remains a potential exposure pathway. Potential exposure to aquatic life would also remain.

-- Multi-layer cap and institutional controls (site fencing and monitoring). This action would provide adequate protection of facility personnel working near the site and large land animals. This action would decrease water infiltration at the site and possibly reduce leachate generation. Since the source of contamination would remain, the installation water supply remains a potential exposure pathway. Potential exposure to aquatic life would remain but would be reduced. Monitoring would have to be long-term due to the proximity of the Lake Eric water supply.

-- Soil removal and limited institutional controls (monitoring). This action would consist of removing and disposal of contaminated soil and regrading the Acid Pond site. Institutional controls would be limited to monitoring the groundwater and surface water. This action would eliminate the source of contamination and thereby be protective of any exposure to humans, animals and aquatic life. With the removal of the source, the groundwater contaminant concentrations should naturally attenuate.

The alternative selected for remediation of the Acid Pond site is soil removal with limited institutional controls. As the site characterization, risk assessment and study of alternatives have been completed for this site, it is planned that this action will be the final remedial action for this site. Cleanup levels in soil of 1 ppb for chromium, 3 ppb for cadmium and 5 ppb for arsenic as well as 5 ppb for lead and selenium were negotiated with the USEPA and the State of Alabama. Groundwater and surface water monitoring will occur annually for three years after completion of the removal.

#### **4. PUBLIC/COMMUNITY INVOLVEMENT**

Coolville Army Depot has a Community Relations Plan. In accordance with the Community Relations Plan, a public notice will be placed in the local newspaper announcing the remedial activities to be completed at the Acid Pond site.

#### **5. DECLARATION**

The selected remedy is protective of human health and the environment, attains Federal and State requirements that are applicable or relevant and appropriate to this removal action, and is cost effective. This remedy satisfies the statutory preference for remedies that employ treatment that reduces toxicity, mobility or volume as a principal element and utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable. Because this remedy will not result in hazardous substances remaining on-site above levels that allow for unlimited use and unrestricted exposure, the five year review will not apply to this action.

#### **6. APPROVAL AND SIGNATURE**

The selected alternative for the Acid Pond site is soil removal and limited institutional controls. The total cost of this action is estimated at \$1 million. The appropriate approval authority for this action is the Coolville Army Depot Installation Commander.

APPROVED BY:

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W. H. JONES  
Colonel, CM  
Commanding

## APPENDIX I

### REPORT DOCUMENTATION PAGE STANDARD FORM 298

The Report Documentation Page (RDP) is used in announcing and cataloging reports. It is the responsibility of the author of the report (if the author is a government employee), or the Contracting Officer's Representative (in the case of a civilian contractor) to ensure that a RDP is prepared for all final reports funded by the Environmental Restoration, Army Account or the Base Closure Account. It is important that this information be consistent with the rest of the report, particularly the cover and title page. Instructions for filling in each block of the form follow. It is important to *stay within the lines* to meet *optical scanning requirements*. An example of a completed RDP is on Page I-4 of this Appendix.

**Block 1.**     Agency Use Only. Leave blank.

**Block 2.**     Report Date. Full publication date including day, month, and year, if available (e.g. 1 Jan 88). Must cite at least the year.

**Block 3.**     Type of Report and Dates Covered. State whether report is interim, final, etc. If applicable, enter inclusive report dates (e.g. 10 Jun 87 - 30 Jun 88).

**Block 4.**     Title and Subtitle. A title is taken from the part of the report that provides the most meaningful and complete information. When a report is prepared in more than one volume, repeat the primary title, add volume number, and include subtitle for specific volume. On classified documents, enter the title classification in parentheses.

**Block 5.**     Funding Numbers. Include contract and grant numbers; may include program element number(s), project numbers(s), task number(s), and work unit number(s). Use the following labels:

C - Contract	PR - Project
G - Grant	TA - Task
PE - Program Element	WU - Work Unit Accession No.

**Block 6.**     Author(s). Name(s) of person(s) responsible for writing the report, performing the research, or credited with the content of the report. If editor or compiler, this should follow the names (s).

**Block 7.**     Performing Organization Name(s) and Address(es). Self-explanatory.

**Block 8.**     Performing Organization Report Number. Enter the unique alphanumeric report number(s) assigned by the organization performing the report.



- Block 9.**      Sponsoring/Monitoring Agency Name(s) and Address(es). Self-explanatory.
- Block 10.**    Sponsoring/Monitoring Agency Report Number. If known. This number is available from Sponsoring Agency's Records Manager or librarian. If blank, AEC will assign report number.
- Block 11.**    Supplementary Notes. Enter information not included elsewhere such as: Prepared in cooperation with...; Trans. of...; To be published in .... When a report is revised, include a statement whether the new report supersedes or supplements the older report.
- Block 12a.**   Distribution/Availability Statements. Denotes public availability or limitations. Cite any availability to the public. Enter additional limitations or special markings in all capitals (e.g. NOFORN).

DoD organizations will use one of seven different distribution statements as provided in DODD 5230.24, [Distribution Statements on Technical Documents," ranging from complete public release to only specific release on a case by case basis by the controlling Army office.

"Distribution Statement A" - Approved for public release; distribution is unlimited" or the abbreviated form - "Statement A, unlimited." This statement shall be used only on unclassified technical documents that do not contain controlled data and has been approved for release by the authorized public release authority. Most IRP or BRAC reports will fall in to this category, especially those reports in the public Administrative Record.

"Distribution Statement B" - Distribution authorized to U.S. Government agencies only; (fill in reason); (date of determination). Other requests for this document shall be referred to (insert name of controlling Army office)" or the abbreviated form - "Statement B, U.S. Government, (controlling Army office)." This statement shall be used to authorize release of the document only to U.S. Government agencies. Reasons for this limitation may include limiting information as requested by a foreign government, protect proprietary information, or protect test and evaluation data.

"Distribution Statement C" - Distribution authorized to U.S. Government agencies and their contractors; (fill in reason); (date of determination). Other requests for this document shall be referred to (insert name of controlling Army office)" or the abbreviated form - "Statement C, U.S. Government and contractors, (controlling Army office)." This statement shall be used to authorize release of the document only to U.S. Government agencies and their contractors. Reasons for this limitation may include limiting information as requested by a foreign government, protect critical technology, or protect software documentation.

"Distribution Statement D" - Distribution authorized to DoD and U.S. DoD contractors only; (fill in reason); (date of determination). Other requests for this document shall be referred to (insert name of controlling Army office)" or the abbreviated form - "Statement D, DoD and U.S. DoD contractors, (controlling Army office)." This statement shall be used to authorize release of the document to DoD components and their contractors. Reasons for this limitation may include limiting information as requested by a foreign government, protect critical technology, or protect software documentation.

"Distribution Statement E" - Distribution authorized to DoD components only; (fill in reason); (date of determination). Other requests for this document shall be referred to (insert name of controlling Army office)" or the abbreviated form - "Statement E, DoD only, (controlling Army office)." This statement shall be used to authorize release of the document to DoD components only. Reasons for this limitation may include limiting information as requested by a foreign government, contains export-controlled technical data, protect proprietary information, protect critical technology, or protect software documentation.

"Distribution Statement F" - Further distribution only as directed by (insert name of controlling Army office) or higher DoD authority; (date of determination)" or the abbreviated form - Statement F, Request approval of (controlling Army office)." This statement shall be used to signify that all distribution of the technical document is to be determined by the Army controlling office.

Distribution Statement X is only used for technical data that are subject to export controls and will not be used on IRP or BRAC reports.

**Block 12b.** Distribution Code. Leave Blank.

**Block 13.** Abstract. Include a brief (*Maximum 200 words*) factual summary of the most significant information contained in the report.

**Block 14.** Subject Terms. Keywords or phrases identifying major subjects in the report.

**Block 15.** Number of Pages. Enter the total number of pages.

**Block 16.** Price Code. Leave blank. Applies to NTIS only.

**Block 17.-19.** Security Classifications. Self-explanatory. Enter U.S. Security Classification in accordance with U.S. Security regulations (i.e., UNCLASSIFIED). If form contains classified information, stamp classification on the top and bottom of the page.

**Block 20.**     **Limitation of Abstract.** Limitation of Abstract. This block must be completed to assign a limitation to the abstract. Enter either UL (unlimited) or SAR (Same as report). An entry in this block is necessary if the abstract is to be limited. If blank, the abstract is assumed to be unlimited.

***SAMPLE***  
***REPORT DOCUMENTATION PAGE***

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.				
1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE April 1998	3. REPORT TYPE AND DATES COVERED FINAL		
4. TITLE AND SUBTITLE U.S. Army Environmental Restoration Programs Guidance Manual		5. FUNDING NUMBERS C-DAAM01-95-C-0063		
6. AUTHOR(S) Ms. Karen Wilson, U.S. Army Environmental Center Mr. Robert Metzger, SciTech Services, Inc. Mr. Dakshesh Patel, SciTech Services, Inc.				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) SciTech Services, Inc. 1311 Continental Drive, Suite G Abingdon, MD 21009		8. PERFORMING ORGANIZATION REPORT NUMBER		
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Environmental Center ATTN: SFIM-AEC-ER Aberdeen Proving Ground, MD 21010-5401		10. SPONSORING/MONITORING AGENCY REPORT NUMBER SFIM-AEC-ER-CR-98014		
11. SUPPLEMENTARY NOTES This manual replaces U.S. Army Installation Restoration Program Guidance Manual, dated December 1993				
12a. DISTRIBUTION/AVAILABILITY STATEMENT Distribution Statement A - Approved for public release, distribution is unlimited		12b. DISTRIBUTION CODE		
13. ABSTRACT (Maximum 200 words) The U.S. Army Environmental Restoration Programs Guidance Manual was prepared by USAEC to provide guidance to the Installation Commander and his/her staff on implementing the Installation Restoration Program and the Base Realignment and Closure (BRAC) Environmental Restoration Program. The manual includes site identification, remedial action process, program management, documentation requirements and approvals, concurrent requirements, public participation, and contract administration. This manual is not intended to replace or modify existing Army regulations or Headquarters Department of the Army directives but to supplement the requirements set forth in these documents.				
14. SUBJECT TERMS Environmental Restoration, Army Account  Installation Restoration National Priorities List Restoration Response Action Process Installation Action Plan  Contracting BRAC Environment Restoration Compliance BRAC Cleanup Plan  Removals RCRA Peer Review		15. NUMBER OF PAGES 383		
		16. PRICE CODE		
17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE UNCLASSIFIED	19. SECURITY CLASSIFICATION OF ABSTRACT UNCLASSIFIED	20. LIMITATION OF ABSTRACT UL	

## APPENDIX J

### TYPES OF CONTRACTS

1. FIRM FIXED PRICE (FFP) (FAR 16.202)	
<b>Characteristics:</b>	Calls for delivery of supplies and/or services at a specified firm price fixed at inception of the contract and is not subject to adjustment in light of actual cost of performance.
<b>Application:</b>	<ol style="list-style-type: none"> <li>1. When fair and reasonable pricing can be established at outset.</li> <li>2. Availability of reasonably definite functional or detailed specifications.</li> <li>3. Available cost or pricing information permits realistic estimates of the probable costs of performance.</li> <li>4. Purchase of "Off the Shelf" items, modified commercial items, and military items for which sound prices can be developed.</li> <li>5. Where performance uncertainties can be identified and reasonably estimated as cost variants, and the contractor agrees to a firm-fixed price representing assumption of the risk involved.</li> </ol>
<b>Advantages:</b>	<ol style="list-style-type: none"> <li>1. Easiest and least costly type of contract to administer.</li> <li>2. Encourages contractor efficiency and economy.</li> <li>3. Maximum risk for profit or loss borne by contractor.</li> <li>4. Allows accurate obligation of funds at outset.</li> </ol>
<b>Disadvantages:</b>	<ol style="list-style-type: none"> <li>1. No recovery by Government if market prices fall; lacks flexibility.</li> <li>2. Not appropriate if specs are indefinite.</li> </ol>
<b>Limitations:</b>	Must be able to provide specific requirements.
<b>Remarks:</b>	<ol style="list-style-type: none"> <li>1. Most preferred type contract; however, usually inappropriate for R&amp;D unless extent of work can be precisely defined.</li> <li>2. May be formally advertised or negotiated.</li> <li>3. Can be expected to produce the widest range of profits and losses.</li> </ol>

## APPENDIX J

### TYPES OF CONTRACTS (Continued)

<b>2. FIXED-PRICE WITH ECONOMIC PRICE ADJUSTMENT (FAR 16.203)</b>	
<b>Characteristics:</b>	<ol style="list-style-type: none"> <li>1. Provides for upward and downward revision of the stated contract price upon the occurrence of specified contingencies</li> <li>2. Price adjustments are based on established prices; actual cost of labor or material; and cost indexes of labor or material.</li> </ol>
<b>Application:</b>	<ol style="list-style-type: none"> <li>1. Utilized when there is serious doubt concerning the stability of market or labor conditions that will exist during an extended period of contract performance; and when contingencies that would otherwise be included in the contract price can be identified and covered separately in the contract.</li> <li>2. Price adjustments based on established prices are based on increases and decreases from an agreed upon level in published or otherwise established prices of specific items or the contract end items. Should normally be restricted to industry-wide contingencies.</li> <li>3. Price adjustments based on labor and material costs should be limited to contingencies beyond the contractor's control.</li> </ol>
<b>Advantages:</b>	Provides contingency allowances for increased costs of labor or materials, protecting both the contractor and the Government against significant loss.
<b>Disadvantages:</b>	More costly to administer and less expeditious as compared to a FFP contract.
<b>Limitations:</b>	<ol style="list-style-type: none"> <li>1. Not to be used unless the contracting officer determines that it is necessary either to protect the contractor and the Government against significant fluctuations in labor or material costs or to provide for contract price adjustment in the event of changes in the contractor's established prices.</li> </ol>
<b>Remarks:</b>	

## APPENDIX J

### TYPES OF CONTRACTS (Continued)

<b>3. FIXED PRICE INCENTIVE (FPI)</b>		<b>(FAR 16.204/16.403)</b>
<b>Characteristics:</b>	Applies profit motivation to obtain more economy and efficiency in defense procurement by offering proportionately high profit for outstanding effective and economical contractor performance; modest profit for mediocre performance and low profit or a loss for below average economy and efficiency in contractor performance.	
<b>Application:</b>	<ol style="list-style-type: none"> <li>Appropriate when parties can negotiate at the outset a firm target cost, target profit, and profit adjustment formula that will provide a fair and reasonable incentive and a ceiling that provides for the contractor to assume an appropriate share of the risk.</li> <li>When incorporating incentive provision(s) into the contract will not only be practical, but will likely result in a savings and more satisfactory attainment of a procurement objective.</li> </ol>	
<b>Limitations:</b>	<ol style="list-style-type: none"> <li>Contractors accounting system must be adequate for price revision purposes and allow satisfactory application of price adjustment formula.</li> <li>Not appropriate for shifting substantially all cost responsibility to the Government.</li> </ol>	
<b>Remarks:</b>	<ol style="list-style-type: none"> <li>Under appropriate individual contract circumstances, performance and delivery incentive provisions may be added to cost incentive. Incentive provisions must be kept in balance as concerns the needs and best interests of the Government.</li> <li>Objective is to obtain what is needed for the requirement at the lowest cost to the Government by the most practical means; is not designed to replace FFP.</li> <li>Billing price is established at outset as interim basis of payment pending determination of final price, or negotiating of a FFP. This interim price is flexible within ceiling limits and subject to adjustment as appropriate upon request of Government or the contractor.</li> <li>Effect of delays and additional costs caused by the Government and beyond control of the contractor will normally be treated outside the incentive pattern or be subject to equitable adjustment.</li> </ol>	



## APPENDIX J

### TYPES OF CONTRACTS (Continued)

<b>4. FIXED-PRICE CONTRACTS WITH PROSPECTIVE PRICE REDETERMINATIONS (FAR 16.205)</b>	
<b>Characteristics:</b>	Provides for a firm-fixed price for an initial period of contract deliveries or performance; with prospective redetermination of the price for subsequent periods of time, at a stated time or times during performance.
<b>Application:</b>	<ol style="list-style-type: none"> <li>Used in acquisitions of quantity production or services for which it is possible to negotiate a fair and reasonable firm-fixed price for an initial period, but not for subsequent periods of contract performance.</li> <li>The initial period should be the longest period for which it is possible to negotiate a fair and reasonable firm fixed price. Each subsequent pricing period should be at least 12 months.</li> <li>The contract may provide for a ceiling price based on evaluation of the uncertainties involved in performance and their possible cost impact. This ceiling price should provide for assumption of a reasonable proportion of the risk by the contractor and, once established, may be adjusted only by operation of contract clauses providing for equitable adjustment or other revision of the contract price under stated circumstances.</li> </ol>
<b>Limitations:</b>	<p>This contract type shall not be used unless:</p> <ol style="list-style-type: none"> <li>Negotiations have established that the conditions for use of a firm-fixed-price contract are not present and a fixed-price incentive contract would not be more appropriate.</li> <li>The contractor's accounting system is adequate for price redetermination.</li> <li>The prospective pricing periods can be made to conform with operation of the contractor's accounting system.</li> <li>There is reasonable assurance that price redetermination actions will take place promptly at the specified times.</li> </ol>
<b>Remarks:</b>	

## APPENDIX J

### TYPES OF CONTRACTS (Continued)

<b>5. FIXED-CEILING-PRICE WITH RETROACTIVE PRICE REDETERMINATION (FAR 16.206)</b>	
<b>Characteristics:</b>	Provides for a fixed ceiling price, and retroactive price redetermination within the ceiling after completion of the contract.
<b>Application:</b>	<p>1. Appropriate for research and development contracts estimated at \$100,000 or less when it is established at the outset that a fair and reasonable firm fixed price cannot be negotiated and that the amount involved and short performance period make the use of any other fixed-price contract type impracticable.</p> <p>2. A ceiling price shall be negotiated for the contract at a level that reflects a reasonable sharing of risk by the contractor. The established ceiling price may be adjusted only if required by the operation of contract clauses providing for equitable adjustment or other revision of the contract price under stated circumstances.</p> <p>3. The contract should be awarded only after negotiation of a billing price that is as fair and reasonable as the circumstances permit.</p> <p>4. Since this contract type provides the contractor no cost control incentive except the ceiling price, the contracting officer should make clear to the contractor during discussion before award that the contractor's management effectiveness and ingenuity will be considered in retroactively redetermining the price.</p>
<b>Advantages:</b>	
<b>Disadvantages:</b>	
<b>Limitations:</b>	<p>This contract type shall not be used unless:</p> <ol style="list-style-type: none"> <li>1. The contract is for research and development and the estimated cost is \$100,000 or less.</li> <li>2. The contractor's accounting system is adequate for price redetermination.</li> <li>3. There is reasonable assurance that the price redetermination will take place promptly at the specified time.</li> <li>4. The head of the contracting activity (or a higher-level official, if required by agency procedures) approves its use in writing.</li> </ol>
<b>Remarks:</b>	Not normally used for environmental contracts.

## APPENDIX J

### TYPES OF CONTRACTS (Continued)

6. FIRM FIXED PRICE LEVEL OF EFFORT TERM CONTRACT (FPLOET) (FAR 16.207)	
<b>Characteristics:</b>	<ol style="list-style-type: none"> <li>1. Government pays the contractor a fixed dollar amount.</li> <li>2. Requires the contractor to provide a specified level of effort, over a stated period of time, on work that can only be stated only in general terms, usually calling for investigation or study.</li> </ol>
<b>Application:</b>	<ol style="list-style-type: none"> <li>1. Particularly useful in the research and exploratory development categories when the work cannot be clearly defined and the level of effort desired can be identified and agreed upon in advance.</li> <li>2. The product of the contract is usually a report showing the results achieved through application of the required level of effort (however, payment is based on the effort expended rather than on the results achieved).</li> </ol>
<b>Advantages:</b>	Can be used in situations in which an administratively expensive cost reimbursement contract might otherwise be necessary; e.g., CPFF.
<b>Disadvantages:</b>	Does not guarantee that desired results will be achieved.
<b>Limitations:</b>	<ol style="list-style-type: none"> <li>1. Can be used only when the work to be performed cannot otherwise be clearly defined.</li> <li>2. Level of effort desired must be identified and agreed upon in advance of performance.</li> <li>3. There must be reasonable assurance that the result desired cannot be achieved by expenditure of less than the stipulated effort.</li> <li>4. The contract price is \$100,000 or less, unless approved by the Chief of the Contracting Office.</li> </ol>
<b>Remarks:</b>	Most useful for R&D studies under \$100,000.

## APPENDIX J

### TYPES OF CONTRACTS (Continued)

<b>7. COST</b>	
<b>(FAR 16.302)</b>	
<b>Characteristics:</b>	<ol style="list-style-type: none"> <li>1. Provides for payment to contractor of allowable and allocable costs only, no fee or other consideration.</li> <li>2. Estimated cost ceiling is established for purpose of fund obligation and limitation of reimbursable cost incurrence by contractor.</li> </ol>
<b>Application:</b>	<ol style="list-style-type: none"> <li>1. When magnitude of performance cost uncertainties preclude use of Fixed Price (FP) contract.</li> <li>2. For R&amp;D work particularly with non-profit educational institute or other non-profit organization and for facilities contracts.</li> <li>3. When contractor wants production experience or to keep plant operating.</li> </ol>
<b>Advantages:</b>	Economical for Government if contractor is efficient and conscientious in performance.
<b>Disadvantages:</b>	<ol style="list-style-type: none"> <li>1. Expensive to administer.</li> <li>2. Little, if any, incentive to contractor to reduce costs.</li> <li>3. contractor must have adequate accounting system.</li> <li>4. Requires appropriate surveillance by government personnel during performance to assure against contractor inefficiency or waste.</li> </ol>
<b>Limitations:</b>	<ol style="list-style-type: none"> <li>1. Required D&amp;F from HPA or (to extent authority delegated) from contractor, supporting its use on the prediction of economy and practicality.</li> <li>2. Ceiling amount not be exceeded by contractor without approval of contractor, except at contractor's own risk of non-reimbursement.</li> <li>3. Government pays only allowable and allocable costs.</li> <li>4. Audit of costs before final payment by the Government.</li> </ol>
<b>Remarks:</b>	Contractor may consider surveillance by Government personnel an imposition.

## APPENDIX J

### TYPES OF CONTRACTS (Continued)

8. COST SHARING	
<b>Characteristics:</b>	Same as Cost contract except contractor is reimbursed only for an agreed-upon portion of its allowable costs.
<b>Application:</b>	<ol style="list-style-type: none"> <li>Used when the contractor agrees to absorb a portion of the costs, in the expectation of substantial compensating benefits.</li> <li>Appropriate of R&amp;D (with other than educational institutions and foreign countries) only when there is a high probability that the contractor will accrue substantial commercial benefits.</li> <li>R&amp;D work with educational institutions or foreign governments.</li> </ol>
<b>Advantages:</b>	Mutual benefit to contractor and Government.
<b>Disadvantages:</b>	Same as Cost type except there is an incentive to reduce costs.
<b>Limitations:</b>	<ol style="list-style-type: none"> <li>Use requires approval of HPA.</li> <li>Required D&amp;F as for Cost type: ceiling amount on allowable cost is established.</li> <li>Audit of costs before final payment.</li> <li>Should not be used as a factor in competitive source selection, nor as a means to obtain unfunded effort in support of programs solely of interest to DoD.</li> <li>Contractor must show conclusive evidence of anticipated commercial benefits to accrue to contractor, and must obtain prior written approval of HPA to use. (NOTE: These controls are N/A to jointly sponsored R&amp;D with educational institutions or foreign countries).</li> </ol>
<b>Remarks:</b>	

## APPENDIX J

### TYPES OF CONTRACTS (Continued)

9. COST PLUS INCENTIVE FEE (CPIF) (FAR 16.304/16.405-1)	
<b>Characteristics:</b>	<ol style="list-style-type: none"> <li>Provides for the initially negotiated fee to be adjusted later by a formula based on the relationship of total allowable costs to total target costs.</li> <li>Provides a target cost, a target fee, a minimum and maximum fee, and a fee adjustment formula, all established during initial negotiations.</li> <li>Upon contractor completion, the formula is applied and, subject to the minimum and maximum fee limits, the fee is adjusted; an increase from target for total allowable cost under-run or a decrease from target for allowable cost over-run.</li> <li>Can incorporate delivery, performance and cost incentive provisions, appropriately weighted to basic procurement objective.</li> </ol>
<b>Application:</b>	<ol style="list-style-type: none"> <li>For development and test of major systems when operational success of development is highly probable.</li> <li>When an incentive formula can be negotiated which will provide positive incentive for effective management and be effective over the entire range of variations that may reasonably be expected either above or below target cost.</li> <li>For both initial product development of major weapons and equipment where desired performance objectives are known, and in subsequent production run with potential for improvement of performance.</li> <li>Given level of performance is desired and confidence in achieving that performance level is reasonable good, but technical and cost uncertainties are excessive for a FPI contract.</li> </ol>
<b>Advantages:</b>	<ol style="list-style-type: none"> <li>Encourages economical, efficient and effective contractor performance when cost-reimbursement type contractor necessary.</li> <li>Mutual benefit potential for Government and contractor.</li> </ol>
<b>Disadvantages:</b>	<ol style="list-style-type: none"> <li>Costly auditing and administrative burden.</li> <li>Contractor must have adequate accounting system for timely and proper cost determination.</li> </ol>
<b>Limitations:</b>	<ol style="list-style-type: none"> <li>Statutory regulations based on FAR 15.903(d).</li> <li>High maximum fee should be balanced by a low minimum fee which may even be a "zero" or (rarely) a "negative" fee.</li> <li>Use requires D&amp;F supporting selection on a basis of economy or practicality.</li> </ol>

## APPENDIX J

### TYPES OF CONTRACTS (Continued)

9. COST PLUS INCENTIVE FEE (CPIF) (Continued)	(FAR 16.304/16.404-1)
Remarks:	<ol style="list-style-type: none"> <li>1. Use weighted guideline method for profit objective.</li> <li>2. Minimum fee should be set for reasonably foreseeable variation above target cost; maximum fee at lowest reasonably foreseeable cost.</li> <li>3. Use of plateaus on share line is decreasing.</li> <li>4. Probable magnitude of cost under-run usually 10% or maybe more; of over-run-20% or more; however, when the probability for technical achievement is high, the fact that there is a high probability for a large cost variance does not dictate the use of a CPIF contractor rather than a FPI contractor.</li> <li>5. Delays and costs beyond the control of the contractor will normally be treated outside the incentive pattern or be subject to equitable adjustment.</li> </ol>

## APPENDIX J

### TYPES OF CONTRACTS (Continued)

10. COST PLUS AWARD FEE (CPAF) (FAR 16.305/16.405-2)	
<b>Characteristics:</b>	<ol style="list-style-type: none"> <li>1. Provides for a fee consisting of a base amount fixed at inception of the contract and an award amount that the contractor may earn in whole or in part during performance and that is sufficient to provide motivation for excellence in such areas as quality, timeliness, technical ingenuity, and cost-effective management.</li> <li>2. Usual elements include: a scope of work statement, the criteria against which the contractor's performance will be evaluated, an estimated total cost, a CPFF type minimum fee and a bonus or reward-only fee.</li> <li>3. Quality of contractor's performance is usually evaluated quarterly by the Government with written reports furnished by the contractor for calling attention to both meritorious work and to any deficiencies, offering opportunity for corrective action to improve subsequent evaluations.</li> <li>4. Amount of the award fee to be paid is determined by the Government's judgmental evaluation of the contractors performance in terms of the criteria stated in the contract. Final fee determination is unilateral by the Government and not subject to appeal under the "Disputes" clause of the contract.</li> </ol>
<b>Application:</b>	<ol style="list-style-type: none"> <li>1. For management of facilities, gathering and analyzing statistics, operation of computer programs, engineering services, etc.</li> <li>2. Work to be performed is such that it is neither feasible nor effective to devise predetermined objective incentive targets applicable to cost, technical performance, or schedule.</li> <li>3. Work which would have been placed under another type of contractor if the performance objectives could be expressed in advance by definite milestones, targets, or goals susceptible of measuring actual performance.</li> </ol>
<b>Advantages:</b>	Offers more incentive for contractor efficiency and economy than CPFF where use of CPFF is not feasible.
<b>Disadvantages:</b>	Evaluation of performance requires much greater effort than in either CPFF or CPIF.



## APPENDIX J

### TYPES OF CONTRACTS (Continued)

10. COST PLUS AWARD FEE (CPAF) (Continued)		(FAR 16.305/16.405-2)
<b>Limitations:</b>	1.	Evaluation criteria must focus on areas where contractor's skill and diligence can significantly affect outcome of work.
	2.	The maximum fee payable (i.e. the base fee plus the highest potential award fee) complies with the limitations as set forth in FAR 15.903.
	3.	Shall not be used as an administrative technique to avoid CPFF when the criteria for CPFF contracts apply nor shall a CPAF contract be used to avoid the effort of establishing objective targets so as to make feasible the use of a CPIF contract.
	4.	Shall not be used where the contract amount, period of performance or the benefits expected are insufficient to warrant the additional administrative effort or cost.
<b>Remarks:</b>	1.	Timeliness of rendering periodic evaluation reports is critical to proper operation of this contract. In addition, maximum administrative effort should be made to provide consistent evaluation standards.
	2.	Weighted guidelines method shall not be used in determining fees in the CPAF arrangement.

## APPENDIX J

### TYPES OF CONTRACTS (Continued)

11. COST PLUS FIXED FEE (CPFF)		(FAR 16.306)
<b>Characteristics:</b>	<ol style="list-style-type: none"> <li>1. Provides for payment to the contractor of a negotiated fee that is fixed at the inception of the contract. The fixed fee does not vary with actual cost, but may be adjusted as a result of changes in the work to be performed under the contract.</li> <li>2. Permits contracting for efforts that might otherwise present too great a risk to contractors, but it provides the contractor only a minimum incentive to control costs.</li> <li>3. Contractor is paid allowable and allocable costs subject to limit of estimated cost amount.</li> <li>4. Drawn in one of two basic forms: Completion or Term.</li> </ol>	
<b>Application:</b>	<ol style="list-style-type: none"> <li>1. Research, preliminary exploration, or studies to determine feasibility of development, and level of effort required is unknown.</li> <li>2. Development and test when use of CPFF impractical.</li> <li>3. Government owned plant, facilities.</li> <li>4. When use of any type fixed-price contractor is inappropriate, and parties agree that a fee is justified.</li> <li>5. Level of effort is required where high technical and costs uncertainty exists.</li> </ol>	
<b>Advantages:</b>	May proceed with vague scope and indefinite specs.	
<b>Disadvantages:</b>	<ol style="list-style-type: none"> <li>1. Provide minimum incentive to contractor to control costs.</li> <li>2. Expensive to administer.</li> <li>3. Essentially, profit without risk to contractor.</li> <li>4. Contractor must have adequate accounting system.</li> <li>5. Least contractor responsibility for cost.</li> </ol>	

## APPENDIX J

### TYPES OF CONTRACTS (Continued)

11. COST PLUS FIXED FEE (CPFF) (Continued)		(FAR 16.306)
<b>Limitations:</b>		<ol style="list-style-type: none"> <li>1. Requires D&amp;F for use; requires a final audit.</li> <li>2. Fixed dollar amount fee is subject to statutory limitations. For experimental R&amp;D work, the fee may not be more than 15% of the estimated cost of the contract, not including the fee. Excluding architectural and engineering design services, the fee for other type CPFF contracts may not be more than 10% of the estimated cost of the contract, not including the fee.</li> <li>3. With respect to CPFF contracts for performing architectural and engineering design services for public work or utility, the total estimated cost (fee plus estimated cost) allowable to the contractor performing such design services may not be more than 6% of the Government cost estimate (not including fees) for the project or work for which the architectural or engineering design services are being performed.</li> <li>4. Normally not used in development of major systems once preliminary exploration, studies and risk reduction have indicated a high degree of probability that the development is achievable and the Government has established reasonably firm performance objectives and schedules.</li> </ol>
<b>Remarks:</b>		<ol style="list-style-type: none"> <li>1. In order to more fully encourage and motivate defense contractors to foster and demonstrate both economy and efficiency in defense contracting, use of CPFF arrangement has been greatly curtailed within DoD.</li> <li>2. Completion form normally required contractor to complete and deliver specified end product as condition for payment of entire fixed dollar amount fee and within the original estimated cost if possible. Government may increase cost estimate and direct contractor to incur costs above original cost estimate without increasing fee.</li> <li>3. Term form obligates contractor to satisfactorily devote specified level of effort for specified period of time to obtain full fee. Renewals for further periods of performance are considered new procurements involving new fee and cost arrangements.</li> </ol>

## APPENDIX J

### TYPES OF CONTRACTS (Continued)

12. INDEFINITE DELIVERY CONTRACT		(FAR 16.5)
Characteristics:	<ol style="list-style-type: none"><li>1. There are three types of indefinite-delivery contracts: definite-quantity contracts, requirement contracts, and, indefinite-quantity contracts. The appropriate type of indefinite-delivery contract may be used to acquire supplies and/or services when the exact times and/or exact quantities of future deliveries are not known at the time of contract award.</li><li>2. Pursuant to 10 U.S.C. 2304d and section 303K of the Federal Property and Administrative Services Act of 1949, requirements contracts and indefinite-quantity contracts are also known as delivery order contracts or task order contracts.</li><li>3. All three types permit Government stocks to be maintained at minimum levels and direct shipment to users.</li><li>4. Indefinite-quantity contracts and requirements contracts also permit flexibility in both quantities and delivery schedule and ordering of supplies or services after requirements materialize.</li></ol>	

## APPENDIX J

### TYPES OF CONTRACTS (Continued)

<b>12a. INDEFINITE DELIVERY – DEFINITE QUANTITY CONTRACT</b>		<b>(FAR 16.502)</b>
<b>Characteristics:</b>	Provides for delivery of definite overall quantity of supplies or services to designated locations, within specified period, upon issuance of orders. May be used in conjunction with a pricing arrangement to effect a Task Order Contract.	
<b>Application:</b>	<ol style="list-style-type: none"> <li>1. When quantity of recurring need services are known in advance.</li> <li>2. Services are readily available or require only short lead time.</li> </ol>	
<b>Advantages:</b>	Save administrative time and expense of repeated negotiations and awards.	
<b>Disadvantages:</b>	Expensive to administer.	
<b>Limitations:</b>		
<b>Remarks:</b>	<ol style="list-style-type: none"> <li>1. Funds obligated for total contract amount on award of contract.</li> <li>2. When used for Task arrangement is usually CPFF Term or T&amp;M/Labor Hour, but may also be fixed price.</li> </ol>	

## APPENDIX J

### TYPES OF CONTRACTS (Continued)

<b>12b. INDEFINITE DELIVERY, REQUIREMENTS CONTRACT (FAR 16.503)</b>	
<b>Characteristics:</b>	<ol style="list-style-type: none"> <li>1. Provides for purchase of actual needs of specific supplies or services of designated activities during a specific period.</li> <li>2. States estimated total quantity need; maximum limit of contractor's obligation to deliver and appropriate provision limiting the Government's obligation to order, when feasible.</li> <li>3. Deliveries scheduled by delivery orders from activities and contract may specify maximum and minimum quantities per individual order.</li> <li>4. Funds are obligated by each delivery order and not by the contract itself.</li> </ol>
<b>Application:</b>	<ol style="list-style-type: none"> <li>1. Utilized to acquire supplies or services when the Government anticipates recurring requirements but cannot predetermine the precise quantities of supplies or services that designated Government activities will need during a definite period.</li> <li>2. Generally, for commercial or modified commercial items of recurring need nature.</li> <li>3. When used to acquire work (e.g., repair, modification, or overhaul) on existing items of Government property, the contracting officer shall specify in the Schedule that failure of the Government to furnish such items in the amounts or quantities described in the Schedule as "estimated" or "maximum" will not entitle the contractor to any equitable adjustment in price under the Government Property clause of the contract.</li> </ol>
<b>Advantages:</b>	<ol style="list-style-type: none"> <li>1. Subject to minimum total quantity's limitation, order only when and to extent need arises.</li> <li>2. Flexible regarding quantity and delivery scheduling.</li> <li>3. Price savings may be realized by combining several requirements into one quantity procurement.</li> </ol>
<b>Disadvantages:</b>	Government generally obligated to place all requirements fitting SOW with the contractor. Expensive to administer.
<b>Limitations:</b>	<ol style="list-style-type: none"> <li>1. No solicitation for a requirements contract for advisory and assistance services in excess of three years and \$10,000,000 (including all options) may be issued unless the contracting officer or other official designated by the head of the agency determines in writing that the services required are so unique or highly specialized that it is not practicable to make multiple awards using the procedures in 16.504.</li> <li>2. Not applicable to an acquisition of supplies or services that includes the acquisition of advisory and assistance services, if the contracting officer or other official designated by the head of the agency determines that the advisory and assistance services are necessarily incident to, and not a significant component of, the contract.</li> </ol>
<b>Remarks:</b>	<ol style="list-style-type: none"> <li>1. Funds obligated on issue of Delivery Orders and, where applicable, on stated minimum total quantity.</li> <li>2. When used for Task Order contract, pricing arrangement is usually CPFF Term or T&amp;M/Labor Hour, but may also be fixed price.</li> </ol>

## APPENDIX J

### TYPES OF CONTRACTS (Continued)

12c. INDEFINITE DELIVERY – INDEFINITE QUANTITY CONTRACT		(FAR 504)
<b>Characteristics:</b>	<ol style="list-style-type: none"> <li>1. Provides for purchase of indefinite quantity, within stated limits, of supplies or services by designated activities during a definite period.</li> <li>2. Deliveries scheduled by placement of orders on contractor.</li> <li>3. Contract may specify maximum and minimum quantities allowable per individual order.</li> <li>4. Funds for other than the stated minimum quantity are obligated by each order; not by the contract itself.</li> </ol>	
<b>Application:</b>	<ol style="list-style-type: none"> <li>1. When actual quantity needs of specific activities for specific period cannot be established in advance beyond a reasonable quantity.</li> <li>2. Generally for commercial or modified commercial items of recurring need nature.</li> </ol>	
<b>Advantages:</b>	Same as Requirements.	
<b>Disadvantages:</b>	Government obligated to order minimum quantity upon award. Expensive to administer.	
<b>Limitations:</b>		
<b>Remarks:</b>	Same as for Requirements contract.	

## APPENDIX J

### TYPES OF CONTRACTS (Continued)

13. TIME AND MATERIALS (T&M) (FAR 16.601)	
<b>Characteristics:</b>	<ol style="list-style-type: none"> <li>Provides for acquiring supplies or services on the basis of direct labor hours at specified fixed hourly rates that include wages, overhead, general and administrative expenses, and profit; and materials at cost, including, if appropriate, material handling costs as part of material costs.</li> <li>As a variant, may entail only Labor-Hours when either no material is involved, or material is not supplied by contractor. Other features of T&amp;M contract apply.</li> <li>Requires a price ceiling which contractor may not exceed except at own risk. contractor must document contract file and substantiate any change to price ceiling and to the extent of such change.</li> </ol>
<b>Application:</b>	<ol style="list-style-type: none"> <li>When nature of work is known in advance, but not the extent, or duration of the work.</li> <li>When it is not possible at outset to anticipate costs with any degree of confidence.</li> <li>Procurement of engineering and design services; manufacture of production and special machine tools; repair, maintenance or overhaul work; emergency situation work.</li> <li>Total estimated contract price does not exceed \$25,000 or the estimated price of material so charged does not exceed 20% of the estimated contract price.</li> </ol>
<b>Advantages:</b>	Can fulfill a special situation need that no other type contract can suitable serve.
<b>Disadvantages:</b>	<ol style="list-style-type: none"> <li>Requires appropriate surveillance by Government during performance to preclude inefficiency or waste by contractor.</li> <li>Danger of contractor running up time to increase profit.</li> <li>Expensive to administer.</li> <li>Contractor must have adequate accounting system.</li> <li>No positive profit incentive to contractor to control costs or to manage labor force efficiently.</li> </ol>
<b>Limitations:</b>	<ol style="list-style-type: none"> <li>Requires D&amp;F by contractor that no other type contract will suitably serve.</li> <li>Contract Must include a ceiling price that the contractor exceeds at its own risk. He contracting officer shall document the contract file to justify the reasons for and amount of any subsequent change in the ceiling price.</li> </ol>
<b>Remarks:</b>	Rarely used for R&D efforts; however, sometimes used for engineering support services.



## APPENDIX K

### PROCUREMENT OPTIONS 8(A) PROGRAM

#### **1. BACKGROUND**

The 8(a) Program encourages participation of small businesses owned by socially and economically disadvantaged minorities in the mainstream of our nation's economy. The term "8(a)" refers to Section 8(a) of the Small Business Act of 1958 which permits the Small Business Administration (SBA) to act as the prime contractor for Federal agencies procuring goods and services, and then subcontract the actual performance of the work to the 8(a) certified companies.

The Section 8(a) program was designed to provide small, minority owned companies with the opportunity to participate in the Federal contracting process. The program gives Federal agencies, to include Department of Defense (DoD), the ability to award contracts with restricted or no competition to participating companies.

#### **2. 8(a) CONTRACTS AWARDS**

There are two basic ways to select an 8(a) contractor.

##### **2.1 Single-Source Set-Asides**

The agency chooses the 8(a) contractor. However these awards are capped at \$3 million for service contracts and \$5 million for contracts with manufacturing Standard Industrial Classification (SIC) codes. There are many compelling reasons to use the 8(a) single source process in procurement as listed below:

- Faster - There is no competition so the procurement process is shortened. More importantly, there are no protests and no CBD advertisement.
- You get what you want - Because there is no competition, the requiring office may have more interaction with the contractor in developing the requirement.
- Realistic pricing - Contract pricing is negotiated.

There is more than one way to process an 8(a) single source contract. A typical process is as follows:

- The government client identifies a requirement and initiates preliminary technical discussions with the 8(a) contractor.
- The 8(a) contractor sends a requirements letter (sometimes called a search letter) to SBA identifying the task.

- SBA sends a letter to the government client requesting that the task be “set aside”.
- The government client responds to the SBA agreeing to the request.
- The government client sends a formal solicitation to the 8(a) contractor.
- The 8(a) contractor responds with a proposal.
- Then the 8(a) contractor and the government negotiate the terms.
- The contract is awarded.

## **2.2 Restricted 8(a) Competition or “8(a) Competes”**

These are competitions that are restricted to eligible 8(a) companies. The 8(a) competitions or 8(a) “competes” must be used when the total value of a contract, including option years, is expected to exceed the \$3 or \$5 million ceiling. The process is very similar to a “full and open” procurement. These must be advertised in the Commerce Business Daily (CBD).

As the prime contractor, the SBA:

- Selects and certifies the firm for initial participation in the 8(a) program.
- Certifies that the firm is in good standing, is competent to fill the Government’s specific requirement, and authorizes the procuring agency to negotiate directly with the firm.
- Provides technical, management, and when necessary, financial assistance to aid the firm in its general development as well as to perform on a specific Government requirement, if necessary.
- Serves as the prime contractor and plays an active role in the procurement processes.
- Conducts a complete management, legal, and contracting review of the procurement documentation, prior to executing the prime contract with the procuring agency.
- Administers the contract with the firm, although this is usually delegated by the SBA to the procuring agency.

As the only procurement technique that allows the program manager sole discretion to choose the specific contractor team for a project, 8(a) procurements save substantial time, work, and cost during the procurement cycle. Additionally, the 8(a) contracting method is a flexible contracting tool that when used appropriately, allows Government program managers to better achieve their procurement goals and objectives.

### **3. HOW IT WORKS**

Without exception, the 8(a) method of contracting is substantially faster than any other contracting alternative. Each DoD agency's Office of Small and Disadvantaged Business Utilization (SADBU) can assist the program manager by identifying 8(a) firms certified to accomplish the procurement requirements.

Once selections have been made, the program manager must express the agency's requirements as a Statement of Work (SOW) and ensure that funds are available in order to accomplish the project. From this point, there are six short steps to contract award.

#### **1) Selecting the Contract Team**

Selecting the contract team is the most important task of the project manager. The project manager is both authorized and encouraged to engage in direct discussions with candidate firms. The discussions may cover any pertinent issue, except contract price and any specific promise of contract award. This freedom of discussion is an important advantage of the 8(a) procurement method. While the Federal Acquisition Regulation (FAR) does not require discussions with multiple firms, the manager is free to do so if time and resources permit.

#### **2) Preparing the Procurement Request**

The project manager identifies the selected firm(s) by naming the company(ies) as the suggested source on the procurement request. Adding the statement "Request procurement be made pursuant to Section 8(a) of the Small Business Act 15 USC 637 (a) and in accordance with FAR 19.8", identifies the request as an 8(a) procurement.

#### **3) Receipt of "Authority to Negotiate" from the SBA**

Receipt of "Authority to Negotiate" from the SBA is requested by the contracting office (often via telephone, with written authorization to follow) from the SBA District Office associated with the firm. Consequently, the preparation of the Request for Proposal (Step 4) need not be delayed while awaiting the SBA authorization letter.

#### **4) Request For Proposal is Issued**

The Request for Proposal (RFP) is issued to the selected 8(a) firm(s) by the client's contracting office.

#### **5) Proposal Evaluation by the Program Manager**

Proposal evaluation by the program manager is generally "pro-forma" if the procurement is sole source, and the freedom of discussion between the program manager and the firm often makes it possible to negotiate all technical issues prior to even submitting the formal proposal. If multiple firms submit proposals, generally the lowest bidder is awarded the contract since, it is assumed, that the RFP would only be issued to qualified firms.

## **6) Contract Award**

Contract award involves three parties: the procuring agency, the SBA, and the firm. After negotiations between the procuring agency and the firm have been completed, a memorandum of negotiations and contract is prepared by the procuring agency. At this time, the firm and the SBA are free to execute the contract and begin work on the requirement. As a practical matter, the firm can play an important role in expediting the contract review by the SBA, if allowed by the procuring agency. Often, a hand-carried, complete procurement package can be routed to and through the SBA in one (1) to fifteen (15) days.

### **4. *PROCUREMENT AUTHORITY***

The 100th Congress of the United States enacted Public Law 100-656 (HR 1807) for business development purposes to help small and disadvantaged businesses. The objective of the Act is to increase the number of small businesses owned and controlled by minority individuals from which the U.S. Government may purchase products and services.

### **5. *STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODES***

The Law allows government agencies to procure environmental services from small businesses provided that such businesses are 8(a) certified by the SBA and approved for the SIC codes in various areas.

#### **5.1 Geotechnical (SIC Codes: 1781, 1799, 8731, 8734, 8999)**

Geology and Geotechnical Engineering: Drilling, sampling, scour analysis, soil stabilization, ground improvements, and computer modeling.

Geoprobings and Geophysical Testing: Seismic refraction, electrical resistivity, magnetometer, and ground penetration radar.

Instrumentation: Installation and development of monitoring wells, piezometer, gas probes, and groundwater hydrology.

#### **5.2 ENVIRONMENTAL (SIC CODES: 1629, 8731, 8733, 8744, 8748)**

Environmental site assessment for phase – I, II, and III. Environmental impact statements, hydro-geological surveys, and regulatory coordination and compliance. .

Hazardous waste materials sampling and monitoring, asbestos and lead paint inspection and testing, landfill closures, soil-gas studies, leaking underground storage tank site and closures, contaminated soils and groundwater remediations, risk assessment and corrective action.

### **5.3 Construction Engineering (SIC Codes: 8731, 8734, 8741)**

Project Management: Value engineering, cost-estimates, pre-bid reviews, bid evaluation, project monitoring, scheduling, and project close-out.

### **5.4 Civil Engineering (SIC Codes: 8711, 8712)**

Designs: Pavements, slabs, embankments, retaining walls, earth works, drainage, sediment and erosion control facilities, and water quality analysis.

## **6. *FEDERAL ACQUISITION REGULATIONS (FAR)***

The FAR, Subchapter D, Part 19, sets forth the regulations and governs the process by which government buys equipment and services. The FAR determines standard industrial classifications, size standards, fair market pricing, contracting negotiations (sole source and competitive 8(a)) and award considerations for 8(a) contracting.

## **7. *BENEFITS OF THE 8(a) CONTRACTING METHOD***

Obviously, the 8(a) Program has been designed to help small disadvantaged companies win contracts from the Federal Government. However, the Program has many benefits for the Government as well.

### **7.1 Shortened Procurement Timeframe**

If the program is earmarked early for the 8(a) Program, the contracting process from development of SOW through contract award can be much shorter than in full and open competitions.

### **7.2 Contractor Selection**

For indefinite quantity procurements with a minimum estimated value under \$3 million, the Government program managers can select the firm for the contract without the chain of approvals normally required for a sole source selection. On larger procurements, the Government can still limit the selection to one of three 8(a) companies through a competition.

### **7.3 Reduced Technical Workload**

Full and open competitions require very strict specifications for products and labor in order to guarantee a successful procurement. Also, the draft RFP must be made available to the general vendor community for additional information, comments, and potential questions. This process involves a great deal of time and labor on the part of the Government.

With 8(a) procurements, the Government managers are encouraged to have an open communication with the contracting company. In fact, the Contractor can actually develop technical specifications and the SOW under direction from the contracting agency. Therefore,

the workload of the Government can be substantially reduced when compared to full and open competitions.

#### **7.4 Minimization Of Protests**

As long as the contracting agency follows the FAR and SBA standard procedures, 8(a) procurements are not subject to protests. The 8(a) process greatly reduces the risk of the delays due to post award protests.

#### **7.5 Competitive Pricing**

According to FAR 19.806 (b), "an 8(a) contract, sole source or competitive, may not be awarded if the price of the contract results in a cost to the contracting agency which exceeds a fair market price." This regulation guarantees that the Government will receive competitive pricing from 8(a) procurements.

## APPENDIX L

### ALPHABETICAL LISTING OF PERTINENT ENVIRONMENTAL INTERNET WEBSITES

Air Force - Office of Small and Disadvantaged Business Utilization	<a href="http://www.safsb.hq.af.mil/index.htm">http://www.safsb.hq.af.mil/index.htm</a>
Air Force Center for Environmental Excellence Home Page	<a href="http://www.afcee.brooks.af.mil/">http://www.afcee.brooks.af.mil/</a>
Air Force Homepage	<a href="http://www.af.mil/">http://www.af.mil/</a>
Air Force Links Page	<a href="http://www.lau.aetc.af.mil/aflinks.html">http://www.lau.aetc.af.mil/aflinks.html</a>
Air Force Office of Scientific Research	<a href="http://web.fie.com/web/fed/afr">web.fie.com/web/fed/afr</a>
Air National Guard	<a href="http://www.ang.af.mil/">http://www.ang.af.mil/</a>
American Chemical Society	<a href="http://www.acs.org/">http://www.acs.org/</a>
American Defense Preparedness Ass.	<a href="http://www.adpa.orge-mail-adpapres@aol.com">http://www.adpa.orge-mail – adpapres@aol.com</a>
American Defense Preparedness Ass. Virtual Planner	<a href="http://vp.sc.ist.ucf.edu">http://vp.sc.ist.ucf.edu</a>
Atmospheric Research, Center for	<a href="http://ucar.edu/metapate.html">http://ucar.edu/metapate.html</a>
Biostatistics, Mathematics and Medical Information	<a href="http://biosun1.harvard.edu/bioinfo.html">http://biosun1.harvard.edu/bioinfo.html</a>
Canadian Centre for Occupational Health and Safety	<a href="http://www.ccohs.ca">http://www.ccohs.ca</a>
Central Intelligence Agency	<a href="http://www.odci.gov/">http://www.odci.gov/</a>
Chemical and Biological Database	<a href="http://www.brad.ac.uk/test/cbw/cbw.html">http://www.brad.ac.uk/test/cbw/cbw.html</a>
Chemical and Biological Defense Information Analysis Center (CBIAC)	<a href="http://www.cbiac.apgea.army.mil/">http://www.cbiac.apgea.army.mil/</a>
Coast Guard	<a href="http://webcom.com/~d13www/welcome.html">http://webcom.com/~d13www/welcome.html</a>
Code of Federal Regulations	<a href="http://law.house.gov/cfr.htm">http://law.house.gov/cfr.htm</a>
Defense Environmental Network & Information Exchange (DENIX)	<a href="http://denix.cecer.army.mil/denix/publiclibrary/closing/closing.html">http://denix.cecer.army.mil/denix/publiclibrary/closing/closing.html</a>
Defense Environmental Restoration Program (DERP)	<a href="http://dogbert.ncr.usace.army.mil/military/derp/derp.htm">http://dogbert.ncr.usace.army.mil/military/derp/derp.htm</a>
Defense Investigative Service	<a href="http://www.dis.mil/">http://www.dis.mil/</a>
Defense Sciences Engineering Division	<a href="http://www.dsed.llnl.gov/">http://www.dsed.llnl.gov/</a>
DoD •Small Business Innovation Research (SBIR) Program •Small Business Technology Transfer (STTR) Program	<a href="http://www.acq.osd.mil/sadbu/sbir/">http://www.acq.osd.mil/sadbu/sbir/</a>
DoD Electronic Commerce Office Homepage	<a href="http://www.acq.osd.mil/ec/">http://www.acq.osd.mil/ec/</a>
DoD Electronic Office	<a href="http://www.acq.osd.mil/ec/">http://www.acq.osd.mil/ec/</a>
DoD Web Directory	<a href="http://www.webdirectory.com/government/us_agencies/Department_">http://www.webdirectory.com/government/us_agencies/Department_</a>
Environmental Consulting Firms – homepages	<a href="http://ourworld.compuserve.com/homepages/stephenlattanzio/envcomp.htm">http://ourworld.compuserve.com/homepages/stephenlattanzio/envcomp.htm</a>
DoD Base Reuse Implementation Manual	<a href="http://www.acq.osd.mil/iai/reinvest/manual">http://www.acq.osd.mil/iai/reinvest/manual</a>

**APPENDIX L: ALPHABETICAL LISTING OF PERTINENT  
ENVIRONMENTAL INTERNET WEBSITES (Continued)**

DoD Environmental Resources	<a href="http://www.dtic.mil/envirodod/dodenvir.html">http://www.dtic.mil/envirodod/dodenvir.html</a>
DoD Environmental Restoration Electronic Bulletin Board	<a href="http://www.dtic.mil/environdod/envsites.html">http://www.dtic.mil/environdod/envsites.html</a>
DoD Index of Specs. and Standards	<a href="http://www.dtic.mil/dps-phila/dodiss">http://www.dtic.mil/dps-phila/dodiss</a>
DoD Industrial Operations Command	<a href="http://www-ioc.army.mil/home/index.htm">http://www-ioc.army.mil/home/index.htm</a>
DoD IS Technology	<a href="http://disal1.disa.atd.net/index.html">http://disal1.disa.atd.net/index.html</a>
DoD Pollution Prevention Hotlines	<a href="http://es.inel.gov/new/contacts/resource/dodtel.html">http://es.inel.gov/new/contacts/resource/dodtel.html</a>
DoD Small Business Contracting	<a href="http://www.acq.osd.mil/sadbu/sbir/">http://www.acq.osd.mil/sadbu/sbir/</a>
DoD Web Sites	<a href="http://www.mrd.usace.army.mil/mrded-h/indres1.html">http://www.mrd.usace.army.mil/mrded-h/indres1.html</a>
Dept. of Health and Human Services	<a href="http://www.os.dhhs.gov">http://www.os.dhhs.gov</a>
Dept. of the Navy	<a href="http://www.navy.com">http://www.navy.com</a>
Directory of US Federal Agency Links	<a href="Http://www.envirobiz.com/govinfo/fedlink.htm">Http://www.envirobiz.com/govinfo/fedlink.htm</a>
DOE	<a href="http://www.doe.gov/">http://www.doe.gov/</a>
DOE - Office of Environment, Safety and Health	<a href="Http://130.20.92.130:8001/esh/home.htm">Http://130.20.92.130:8001/esh/home.htm</a>
DOE Acquisitions	<a href="ftp://ftp.fedworld.gov/pub/doe/doe.htm">ftp://ftp.fedworld.gov/pub/doe/doe.htm</a>
DOE Albuquerque	<a href="http://www.doeal.gov/">http://www.doeal.gov/</a>
DOE Energy Pollution Prevention Database	<a href="http://www.Es.hel.gov/program/p2fept/">http://www.Es.hel.gov/program/p2fept/</a>
DOE Environmental Guidance – RCRA	<a href="Http://134.167.74.198/oepa/guidance/rcra.htm">Http://134.167.74.198/oepa/guidance/rcra.htm</a>
Ecological Risk Analysis Tools	<a href="http://hsdr.ornl.gov/ecorisk/ecorisk.html">http://hsdr.ornl.gov/ecorisk/ecorisk.html</a>
Ecological Risk Assessment Guidelines	<a href="http://epa.gov/ord/webpubs/ecorisk/">http://epa.gov/ord/webpubs/ecorisk/</a>
Environmental Acronyms	<a href="http://www.epa.gov/OCEPAterms/">http://www.epa.gov/OCEPAterms/</a>
Environmental Compliance	<a href="http://www.exsysinfo.com/appnotes/environmento.htm">http://www.exsysinfo.com/appnotes/environmento.htm</a>
Environmental Consultants Handilinks	<a href="http://www.ahandyguide.com/cat1/e/e36.htm">http://www.ahandyguide.com/cat1/e/e36.htm</a>
Environmental Directory	<a href="http://www.ovam.be/internetrefs/english.htm">http://www.ovam.be/internetrefs/english.htm</a>
Environmental Health Center/National Safety Council	<a href="http://envirolink.org">http://envirolink.org</a>
Environmental Industry Web Site	<a href="http://enviroindustry.com/">http://enviroindustry.com/</a>
Environmental Information Resources	<a href="http://gwis.circ.gwu.edu/~greenu/gov.htm">http://gwis.circ.gwu.edu/~greenu/gov.htm</a>
Environmental Information Resources Program	<a href="http://www.fcn.org/fcn/pageone/irap.html">http://www.fcn.org/fcn/pageone/irap.html</a>
Environmental Issues Mailing List	<a href="http://www.sej.org/env_list.htm">http://www.sej.org/env_list.htm</a>
Environmental Laws	<a href="http://www.epa.gov/Region5/def.html">http://www.epa.gov/Region5/def.html</a>
Environmental Laws - World Wide Web	<a href="http://www.webcom.com/staber/">http://www.webcom.com/staber/</a>
Environmental News Network	<a href="http://enn.com">http://enn.com</a>



## APPENDIX L: ALPHABETICAL LISTING OF PERTINENT ENVIRONMENTAL INTERNET WEBSITES (Continued)

Environmental Organization Directory	<a href="http://www.webdirectory.com/government/law/">http://www.webdirectory.com/government/law/</a>
Environmental Organizations Library	<a href="http://envirolink.org/orgs/">http://envirolink.org/orgs/</a>
Environmental Professional's Guide to the Net	<a href="http://www.geopac.com/">http://www.geopac.com/</a>
Environmental Professional's Homepage	<a href="http://www.clay.net/">http://www.clay.net/</a>
Environmental Programs Homepage	<a href="http://usace.mil/env.html">http://usace.mil/env.html</a>
Environmental Resources	<a href="http://www.environmentonline.com">http://www.environmentonline.com</a>
Environmental Services Directory – Contractors Phonebook	<a href="http://www.envirobiz.com/cgi-bin/wais-ph.pl/phonebk">http://www.envirobiz.com/cgi-bin/wais-ph.pl/phonebk</a>
Federal & State Environmental Information	<a href="http://www.envirobiz.com/govinfo/ustat.htm">http://www.envirobiz.com/govinfo/ustat.htm</a>
Federal Acquisition Regulation (FAR)	<a href="http://www.fedmarket.com/far_indx.html">http://www.fedmarket.com/far_indx.html</a>
Federal Agency Links – Directory	<a href="http://www.envirobiz.com/gavinfo/fedlink.htm">http://www.envirobiz.com/gavinfo/fedlink.htm</a>
Federal and State Regulations	<a href="http://www.gate.net/~gwarbis/solutions">http://www.gate.net/~gwarbis/solutions</a>
Federal Bureau of Investigation	<a href="http://www.fbi.gov/">http://www.fbi.gov/</a>
Federal Government Agencies	<a href="http://www.lib.lsu.edu/gov/fedgov.html">http://www.lib.lsu.edu/gov/fedgov.html</a>
Federal Register	<a href="http://www.access.gpo.gov/su_docs/">http://www.access.gpo.gov/su_docs/</a>
Federal Remediation Technologies Roundtable	<a href="http://www.frtr.gov/">http://www.frtr.gov/</a>
Federation of American Scientists	<a href="http://www.fas.org/index.html">http://www.fas.org/index.html</a>
General Environmental Resources	<a href="http://www.ypn.com/topics/5891.html">http://www.ypn.com/topics/5891.html</a>
Government Contractor Resource Center	<a href="http://www.govcon.com/">http://www.govcon.com/</a>
Government Contracts	<a href="http://www.govcon.com/">http://www.govcon.com/</a>
Government Environmental Agencies	<a href="http://www.studorg.nwu.edu/seed/envirogov.html">http://www.studorg.nwu.edu/seed/envirogov.html</a>
Harvard Sussex Program on CBW Armament and Arms Limitation	<a href="http://fas-www.harvard.edu/~hsp/">http://fas-www.harvard.edu/~hsp/</a>
Hazardous Substance Release/Health Effects Database (HAZDAT)	<a href="http://atsdr1.atsdr.dcd.gov:8080/atsdrhome.html">http://atsdr1.atsdr.dcd.gov:8080/atsdrhome.html</a>
HAZWOPER	<a href="http://198.17.175.2/search97cgi/utopic.exe?action=view">http://198.17.175.2/search97cgi/utopic.exe?action=view</a>
Health and Safety Plan Guidelines	<a href="http://tis-hq.eh.doe.gov/docs/hasp/100000.txt">http://tis-hq.eh.doe.gov/docs/hasp/100000.txt</a>
House of Representatives	<a href="http://www.house.gov">http://www.house.gov</a>
Index of Occupational Safety & Health Resources on the Internet	<a href="http://turva.me.tut.fi/~tuusital/oshlinks.html">http://turva.me.tut.fi/~tuusital/oshlinks.html</a>
Industrial Operations Command	<a href="http://www-ioc.army.mil/home/index.htm">http://www-ioc.army.mil/home/index.htm</a>
Industrial Waste Services Online	<a href="http://www.tsdx.com">http://www.tsdx.com</a>
International Assn. Of Personal Protection Specialists (IAPPS)	<a href="http://www.mps.ohio-state.edu/cgi-bin/hpp?lapps_home.html">http://www.mps.ohio-state.edu/cgi-bin/hpp?lapps_home.html</a>
International Environmental Information Network	<a href="http://www.envirobiz.com/buttons/services.htm">http://www.envirobiz.com/buttons/services.htm</a>

**APPENDIX L: ALPHABETICAL LISTING OF PERTINENT  
ENVIRONMENTAL INTERNET WEBSITES (Continued)**

International Environmental Resources	<a href="http://contact.org/environs.htm">http://contact.org/environs.htm</a>
International Organization for Standardization	<a href="http://www.iso.ch/welcome.html">http://www.iso.ch/welcome.html</a>
ISO 14000 Information	<a href="http://www.iso14000.com/">http://www.iso14000.com/</a>
Library of Congress Homepage	<a href="http://www.loc.gov/">http://www.loc.gov/</a>
Maryland State Environmental Information	<a href="http://www.envirobiz.com/govinfo/md.htm">http://www.envirobiz.com/govinfo/md.htm</a>
NASA - Langley Research Procurement	<a href="http://db-www.arc.nasa.gov/procurement/home-page.html">http://db-www.arc.nasa.gov/procurement/home-page.html</a>
NASA Ames Research Center	<a href="http://www.arn.nasa.gov/">http://www.arn.nasa.gov/</a>
NASA Kennedy Space Center	<a href="http://www.ksc.nasa.gov/">http://www.ksc.nasa.gov/</a>
NASA Spacelink	<a href="http://spacelink.msfc.nasa.gov/">http://spacelink.msfc.nasa.gov/</a>
National Association of Environmental Professionals	<a href="http://enfo.com/naep">http://enfo.com/naep</a>
National Defense Center for Environmental Excellence	<a href="http://www.ndcee.ctc.com/">http://www.ndcee.ctc.com/</a>
National Environmental Information Resources	<a href="http://gwis.circ.gwu.edu/~greenu/usenet.html">http://gwis.circ.gwu.edu/~greenu/usenet.html</a>
National Information on Base Reuse	<a href="http://www.ceder.ca.gov/military/national.html">http://www.ceder.ca.gov/military/national.html</a>
National Weather Service Office	<a href="http://thunder.met.fsu.edu/nws/public_html/">http://thunder.met.fsu.edu/nws/public_html/</a>
Natural Toxins Database – National University of Singapore BioMed Web Server	<a href="http://biomed.nus.sg">http://biomed.nus.sg</a>
NIOSH	<a href="http://www/.cdc.gov.niosh/homepage.htm">http://www/.cdc.gov.niosh/homepage.htm</a>
OSHA	<a href="http://www.osha.gov">http://www.osha.gov</a>
OSHA Salt Lake Technical Center	<a href="http://www.osha-slc.gov">http://www.osha-slc.gov</a>
Patent and Trademark Depository Libraries	<a href="http://www.uspto.gov/web/ptds/pdtl.html">http://www.uspto.gov/web/ptds/pdtl.html</a>
Pesticide Information Profiles (EXTOXNET)	<a href="http://ace.ace.orst.edu/info/extoxnet/">http://ace.ace.orst.edu/info/extoxnet/</a>
Pharmacology & Toxicology Research laboratory (PTRL)	<a href="http://www.ptrl.com/">http://www.ptrl.com/</a>
Remedial Investigation/Feasibility Study Issues	<a href="http://es.inel.gov/oeca/osre/study.html">http://es.inel.gov/oeca/osre/study.html</a>
Remedial Investigations	<a href="http://www.em.doe.gov/rcracerc/remeinvs.html">http://www.em.doe.gov/rcracerc/remeinvs.html</a>
RISKWeb	<a href="http://riskweb.bus.utexas.edu/riskweb.html">http://riskweb.bus.utexas.edu/riskweb.html</a>
Safety Online	<a href="http://www.safetyonline.net">http://www.safetyonline.net</a>

**APPENDIX L: ALPHABETICAL LISTING OF PERTINENT  
ENVIRONMENTAL INTERNET WEBSITES (Continued)**

Small and Disadvantaged Business Utilization Office Home Page	<a href="http://www.acq.osd.mil/sadbu/">http://www.acq.osd.mil/sadbu/</a>
Society of Environmental Journalists	<a href="http://www.sej.org/">http://www.sej.org/</a>
Society of Environmental Toxicology & Chemistry (SETAC)	<a href="http://www.setac.org/">http://www.setac.org/</a>
Space, Science and Engineering Center	<a href="http://www.ssec.wisc.edu/">http://www.ssec.wisc.edu/</a>
State Environmental Agencies	<a href="http://www.webcom.com/staber/states.html">http://www.webcom.com/staber/states.html</a>
Stockholm International Peace Research Institute (CWC)	<a href="http://www.sipri.se/">http://www.sipri.se/</a>
Superfund Documents – NEIS	<a href="http://www.cais.com/the/neis/superfund.html">http://www.cais.com/the/neis/superfund.html</a>
Superfund Homepage	<a href="http://www.epa.gov/superfund">http://www.epa.gov/superfund</a>
Superfund Reauthorization Legislation	<a href="http://atsdr1.atsdr.cdc.gov.8080/superfund.html">http://atsdr1.atsdr.cdc.gov.8080/superfund.html</a>
TERCs Home Page	<a href="http://terc.icfkaiser.com/">http://terc.icfkaiser.com/</a>
The United Nations	<a href="http://www.un.org">http://www.un.org</a>
The White House	<a href="http://www.whitehouse.gov/">http://www.whitehouse.gov/</a>
Toxic Substances and Disease Registry	<a href="http://atsdr1.atsdr.cdc.gov.8080/cx.html">http://atsdr1.atsdr.cdc.gov.8080/cx.html</a>
U.S. Army Center for Health Promotion and Preventive Maintenance (CHPPM)	<a href="http://chppm-www.apgea.army.mil/dehedir.htm">http://chppm-www.apgea.army.mil/dehedir.htm</a>
U.S. Army Corps of Engineers	<a href="http://www.usace.mil/usace-commands.html">http://www.usace.mil/usace-commands.html</a>
U.S. Center for Disease Control	<a href="http://www.cdc.gov">http://www.cdc.gov</a>
US Army – Chemical Demilitarization - PM	<a href="http://www-pmcd.apgea.army.mil">http://www-pmcd.apgea.army.mil</a>
US Army Center for Lessons Learned	<a href="http://call.army.mil:1100/call.html">http://call.army.mil:1100/call.html</a>
US Army Chemical and Biological Defense Command	<a href="http://www.cbdcom.apgea.army.mil/">http://www.cbdcom.apgea.army.mil/</a>
US Army Code of Regulations	<a href="http://140.229.1.16:9000./htdocs/teinfo/service/army/regul.html">http://140.229.1.16:9000./htdocs/teinfo/service/army/regul.html</a>
US Army Corps of Engineers - Contracting	<a href="http://www.usace.army.mil/cemp/mainmp.htm">http://www.usace.army.mil/cemp/mainmp.htm</a>
US Army Corps of Engineers - Documents	<a href="http://inet/usace-docs/">http://inet/usace-docs/</a>
US Army Corps of Engineers - Environmental Division	<a href="http://www.mrd.usace.army.mil/mrdeh/access/statement.htm">http://www.mrd.usace.army.mil/mrdeh/access/statement.htm</a>
US Army Corps of Engineers - Waterway Experiment Station, Vicksburg	<a href="http://ebs.wes.army.mil/">http://ebs.wes.army.mil/</a>
US Army Corps of Engineers Homepage	<a href="http://www.usace.army.mil/inet/organization/">http://www.usace.army.mil/inet/organization/</a>
US Army Corps of Engineers – Project Information Retrieval System (PIRS)	<a href="http://dogbert.ncr.usace.army.mil/default.htm">http://dogbert.ncr.usace.army.mil/default.htm</a>
US Army Environmental Center	<a href="http://aec-www.apgea.army.mil:8080/">http://aec-www.apgea.army.mil:8080/</a>
US Army Homepage	<a href="http://www.army.mil/">http://www.army.mil/</a>

**APPENDIX L: ALPHABETICAL LISTING OF PERTINENT ENVIRONMENTAL INTERNET WEBSITES (Continued)**

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## APPENDIX M

### LIST OF PERTINENT PHONE NUMBERS

AGENCY	TELEPHONE NO.
<b>AIR POLLUTION MANAGEMENT</b>	
EPA - Acid Rain (emissions trading, auctions, general information)	(617) 674-7377
EPA - Air Control Technology Assistance Center Hotline	(919) 541-0800
EPA - Air Risk Hotline	(919) 541-0888
EPA - Emissions Measurement & Monitoring	(919) 541-5543
EPA - Indoor Air Quality Information Clearinghouse	(800) 438-4318
EPA - Mobile Sources Emissions	(313) 668-4511
EPA - Stratospheric Ozone Protection (CFC's)/Clean Air Act Hotline	(800) 296-1996
EPA Radon Hotline	(800) 767-7326
National Oceanic & Atmospheric Administration (NOAA)	(202) 482-6090
ODEP - Environmental Quality Division	(703) 693-0547 DSN 223-0547
USACHPPM - Air Pollution Source Management	(410) 671-3500
<b>APPROPRIATE TECHNOLOGY</b>	
DOE - Appropriate Technology	(800) 428-2525
DOE - National Alternative Fuels Hotline	(800) 423-1363
Green Lights/Energy Star Programs	(202) 775-6650
<b>ENVIRONMENTAL NOISE</b>	
USACHPPM - Environmental Noise Division	(410) 671-3829 DSN 584-3829
<b>ASBESTOS</b>	
EPA - Asbestos Hotline	(800) 368-5888
<b>DEPARTMENT OF THE AIR FORCE</b>	
Air Force Center for Environmental Excellence	(800) 233-4356 (210) 536-4214 DSN-240-4214
<b>DEPARTMENT OF THE ARMY</b>	
Office of the Directorate; Army Environmental Programs	(703) 693-0551/2 DSN-223-0551/2
U.S. Army Center For Health Promotion & Preventative Medicine (USACHPPM)	(800) 222-9698  (410) 671-4375

**AGENCY****TELEPHONE NO.****US ARMY CORPS OF ENGINEERS (USACOE)**

Environmental Division, Directorate of Military Programs	(202) 761-8824
Formerly Used Defense Sites Branch	(202) 761-8880
Installation Support Branch	(202) 761-4950
Interagency Environmental Assistance Branch	(202) 761-5051
Intergovernment & Superfund Support Branch	(202) 761-8879
Policy & Technology Branch	(202) 761-4705
Program Resource Branch	(202) 761- 0209

Programs Management Division	(202) 761-1145
Engineering & Construction Division, Directorate of Military Programs	(202) 761-8826
Construction Engineering Laboratories, Denix Technical Assistance Center	(800) 864-4733

Hazardous, Toxic, Radioactive, Waste Center of Expertise	(217) 373-4519/4420
Ordnance & Explosives Center of Expertise	(402) 697-2555
Design Center	(205) 895-1510

**US ARMY ENVIRONMENTAL CENTER (USAEC)**

Environmental Quality Division	(410) 671-1200/4714
Compliance Support Branch	(410) 671-1208/2427
Pollution Prevention Branch	(410) 671-1229/4713
Conservation Branch	(410) 671-1579/3206
Environmental Technology Division	(410) 671-2466
Office of the Commander	(410) 671-1582/2657
Public Affairs Office	(410) 671-1267/2556
Resource Management Division	(410) 671-1638/4228
Information Management Branch	(410) 671-1676/1650
Environmental Restoration Division	(410) 671-1536/3618
Program Management Branch	(410) 671-3240
Program Review and Assistance Branch	(410) 671-3921
Restoration Oversight and Evaluation Branch	(410) 671-3261

**US ARMY ENVIRONMENTAL RESPONSE LINE**

CONUS	(800) 872-3845
OCONUS	(410) 671-1699
	DSN-584-1699

AGENCY	TELEPHONE NO.
<b>DEPARTMENT OF THE NAVY</b>	
Office of Naval Research	(703) 696-4767
Naval Facilities Engineering Command, Environmental Services	(703) 325-8539
Navy Ship Environmental Information Clearinghouse	(703) 416-1132
<b>EMERGENCY PLANNING &amp; COMMUNITY RIGHT-to-KNOW</b>	(800) 535-0202
<b>ENFORCEMENT</b>	
Office of Environmental Justice	(800) 962-6215
U.S. Department of Justice	(202) 514-2007
National Response Center (Coast Guard)	(800) 424-8802
<b>ENVIRONMENTAL PROTECTION AGENCY</b>	
PUBLIC INFORMATION CENTER	(202) 260-2080
<b>EPA DOCKETS</b> (information regarding official files of rulemaking documents, etc.)	
RCRA	(703) 603-9230
Clean Air	(703) 260-7548
Drinking Water	(202) 260-7908
Superfund	(703) 603-8917
Underground Tanks	(703) 603-9231
Pesticides	(703) 305-8505
<b>EPA REGIONAL OFFICES</b>	
Region I - Boston, MA (CT, MA, ME, NH, RI, VT)	
General Information	(617) 565-3420
Federal Facilities Program	(617) 565-3927
Region II - New York, NY (NJ, NY, PR, VI)	
General Information	(212) 637-3000
Federal Facilities Program	(212) 637-4332
Region III - Philadelphia, PA (DE, MD, PA, VA, WV)	
General Information	(215) 566-2729
Federal Facilities Program	(215) 566-5121
Federal Facility Superfund Program	(215) 566-3348
Federal Facility Water management Program	(215) 566-5463
Region IV - Atlanta, GA (AL, FL, GA, KY, MS, NC, SC, TN)	
General Information	(404) 562-9590
Federal Facilities Program	(404) 562-9625
Region V - Chicago, IL (IL, IN, MI, MN, OH, WI)	
General Information	(312) 353-2000
Federal Facilities Program	(312) 886-9895

<b>AGENCY</b>	<b>TELEPHONE NO.</b>
Region VI - Dallas, TX (AR, LA, NM, OK, TX)	
General Information	(214) 665-6444
Federal Facilities Program	(214) 665-6430
Region VII - Kansas City, KS (IA, KS, MO, NE)	
General Information	(913) 551-7000
Federal Facilities Program	(913) 551-7400
Region VIII - Denver, CO (CO, MT, ND, SD, UT, WY)	
General Information	(303) 312-6312
Federal Facilities Program	(303) 312-6249
Region IX - San Francisco, CA (AZ, CA, GUAM, HI, NV)	
General Information	(415) 744-1500
Federal Facilities Program	(415) 744-1663
Region X - Seattle, WA (AK, ID, OR, WA)	
General Information	(206) 553-1200
Federal Facilities Program	(206) 553-2803
<b>ENVIRONMENTAL EDUCATION</b>	(202) 260-4962
<b>EXPLOSIVES SAFETY</b>	
Ordnance & Explosives Center of Expertise & Design Center	(205) 895-1510
USATCES	(815) 273-8802
	DSN 585-8802
<b>FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)</b>	(202) 646-4600
<b>GROUNDWATER CONTAMINATION</b>	
EPA - Groundwater Protection Division	(202) 260-7077
EPA - Safe Drinking Water Hotline	(800) 426-4791
USACHPPM - Groundwater & Solid waste	(410) 671-2024
U.S. Geological Survey (USGS)	(703) 648-4460
<b>HAZARDOUS &amp; TOXIC WASTE, MATERIALS MANAGEMENT</b>	
Agency for Toxic Substances & Disease Registry (ATSDR)	(800) 447-1544
EPA - RCRA/Superfund Hotline (RCRA/CERCLA/UST)	(800) 424-9346
EPA - Toxic Substance Control Act Hotline	(202) 554-1404
National Response Center (Operated by the US Coast Guard)	(800) 424-8802
<b>LEAD</b>	
National Lead Information Center	(800) LEAD-FYI
<b>MARINE CORPS</b>	
Headquarters for the Marine Corps Environmental Program	(703) 696-2138



**AGENCY****TELEPHONE NO.****PESTICIDE AND PEST MANAGEMENT**

DOD Pesticide Hotline	(410) 671-3773
EPA - Office of Pesticide Program Registration Division	(800) 858-7378
National Pesticide Information Retrieval System (NPIRS)	(765) 494-6616
National Pesticide Telecommunications Network	(800) 858-7378
USACHPPM - Entomology Division (Pest Management)	(410) 671-3613

**POLLUTION PREVENTION**

AEC - Environmental Information Response Line	(800) 872-3845
DOE Hazardous Technical Information Service (HTIS)	(800) 848-4847
EPA - Pollution Prevention Clearinghouse	(202) 260-1023
EPA - Pollution Prevention Information Exchange System	(703) 821-4800
USACHPPM - Hazardous & Medical Waste Management	(410) 671-3651

**PUBLICATIONS**

EPA - National Center for Environmental Publications & Information	(513) 489-8190
National Technical Information Service (NTIS)	(703) 487-4650
EPA ORD Research Information (Cincinnati)	(513) 569-7562

**RESEARCH & DEVELOPMENT**

Strategic Environmental Research & Development Program	(703) 696-2117
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**SAFETY & HEALTH**

Agency for Toxic Substance & Disease Registry (ATSDR)	(404) 639-2888
Center for Disease Control & Prevention (CDC)	(404) 639-3311
CHEMTREC Center for Non-Emergency Services	(800) 262-8200
NIOSH	(202) 401-6995
OSHA	(202) 219-7162
U.S. Department of Transportation	(202) 366-4570

**SOLID WASTE**

Solid Waste Information Clearinghouse	(800) 677-9424
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**TRANSPORTATION OF HAZARDOUS MATERIALS**

DOT - Transportation of Hazardous Materials	(800) 467-4922
HAZMAT - IL only	(800) 367-9592
HAZMAT (operated by DoT & Federal Emergency Management Agency)	(800) 752-6367
U.S. Department of Transportation	(202) 366-4570

**UNDERGROUND STORAGE TANKS**

RCRA/Superfund/UST Hotline	(800) 424-9346
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AGENCY	TELEPHONE NO.
<b>U.S. COAST GUARD</b>	(202) 267-1587
<b>WATER RESOURCES</b>	
Assessment and Watershed Protection Division (EPA)	(202) 260-7040
Effluent Assessment & Watershed Protection Division (EPA)	(202) 260-7040
Drinking Water Hotline	(800) 426-4791
Groundwater Protection Division (EPA)	(202) 260-7077
Oceans & Coastal Protection Division (EPA)	(202) 260-1952
Safe Drinking Water Act Monitoring	(202) 260-3874
Storm Water NPDES Permitting Hotline (EPA)	(703) 821-4823
Wastewater Hotline	(800) 624-8301
Water Quality Standards	(202) 260-7301
Wetlands Information Hotline	(800) 832-7828
Wetlands Permitting & Mitigation Banking	(202) 260-7791